John Buridan

Summulae de Dialectica

An annotated translation,
with a philosophical
introduction by Gyula Klima

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John Buridan

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Contents

Acknowledgments *xxv*
Introduction *xxvii*

1. Treatise 1: On propositions *1*
   1.1. Chapter 1: Some preliminaries *4*
      1.1.1. On dialectic *4*
      1.1.2. The prerequisites of disputation *7*
      1.1.3. On sound *7*
      1.1.4. On utterances *9*
      1.1.5. The division of significative utterances *10*
      1.1.6. The division of conventionally significative utterances *10*
   1.2. Chapter 2: On names, verbs, and expressions *14*
      1.2.1. On names *14*
      1.2.2. On verbs *18*
      1.2.3. On expressions *20*
   1.3. Chapter 3: On propositions *21*
      1.3.1. The description of proposition *21*
      1.3.2. The division of propositions into categorical and hypothetical *22*
      1.3.3. On subject and predicate *25*
      1.3.4. The division of categorical propositions with respect to substance *29*
      1.3.5. The division of categorical propositions with respect to quantity *32*
      1.3.6. The division of propositions with respect to quality *34*
      1.3.7. The questions asking about the divisions of propositions *35*
   1.4. Chapter 4: On the opposition of categorical propositions *36*
      1.4.1. On pairs of propositions that share some of their terms *36*
      1.4.2. The square of opposition *37*
      1.4.3. On the matter of propositions *39*
      1.4.4. The laws of oppositions *41*
   1.5. Chapter 5: On the equipollence of propositions *42*
      1.5.1. The description of equipollence *42*
      1.5.2. The first rule of equipollence *43*
      1.5.3. The second rule of equipollence *46*
      1.5.4. The third rule of equipollence *47*
      1.5.5. The fourth rule of equipollence *47*

1.6. Chapter 6: On the conversions of propositions *48*
1.6.1. Three kinds of conversion *48*
1.6.2. On simple conversion *50*
1.6.3. On accidental conversion *51*
1.6.4. On contraposition *55*
1.6.5. Two notable points *56*
1.7. Chapter 7: On hypothetical propositions *57*
1.7.1. On hypothetical propositions in general *57*
1.7.2. The species of hypothetical propositions *60*
1.7.3. On conditional propositions *61*
1.7.4. On conjunctive propositions *62*
1.7.5. On disjunctive propositions *63*
1.7.6. On causal propositions *64*
1.7.7. On temporal propositions *65*
1.7.8. On local propositions *66*
1.8. Chapter 8: On modal propositions *67*
1.8.1. The description of mode *67*
1.8.2. The modes that render a proposition modal *67*
1.8.3. On the subject, predicate, and copula of modals properly so-called *70*
1.8.4. On the quality of modals *73*
1.8.5. On the quantity of modals *75*
1.8.6. On the oppositions of modals *77*
1.8.7. On the equipollences of modals *82*
1.8.8. On the conversions of modals *84*
1.8.9. On composite modals *88*
1.8.9.1. On composite modals in general *88*
1.8.9.2. On the equivocation of the subjects and predicates of composite modals *89*
1.8.9.3. On the quality of composite modals *90*
1.8.9.4. On the conversions of composite modals *95*
1.8.10. On modals about contingency *97*

2. Treatise 2: On predicables *101*
2.1. Chapter 1: On the predicables *103*
2.1.1. Several senses of the term 'predicable' *103*
2.1.2. The difference and agreement between 'predicable' and 'universal' *105*
2.1.3. The division of predicables *106*
2.2. Chapter 2: On genus *107*

2.2.1. The definition of genus *107*
2.2.2. On the phrase 'different in species' *109*
2.2.3. On the phrase 'predicated *in quid*' *113*
2.2.4. Another definition of genus *113*
2.2.5. The division of genus *114*
2.2.6. On the most general genus *114*
2.2.7. On the subaltern genus *115*
2.3. Chapter 3: On species *116*
2.3.1. The definition of species *116*
2.3.2. The division of species and the clarification of the members of the division *117*
2.3.3. A corollary *117*
2.3.4. An explanation of what has been said *118*
2.3.5. The description of individual *118*
2.4. Chapter 4: On difference *121*
2.4.1. On the name 'difference' *121*
2.4.2. The definition of difference *123*
2.4.3. Another definition of difference *124*
2.4.4. A notable point *124*
2.4.5. A corollary *125*
2.5. Chapter 5: On property *125*
2.5.1. The diverse senses of 'property' *125*
2.5.2. The definition of property *126*
2.6. Chapter 6: On accident *128*
2.6.1. The definition of accident *128*
2.6.2. Another definition of accident *130*
2.6.3. The third definition of accident *132*
2.6.4. The division of accident *132*
2.6.5. The elimination of a doubt *133*
2.7. Chapter 7: The common and proper features of predicables *134*
2.7.1. The comparison of all predicables among each other *134*
2.7.2. The comparison of genus, species, and difference taken together with property and accident taken together *135*
2.7.3. The comparison of genus and difference taken together with species *136*
2.7.4. The comparison of genus and species taken together with difference *137*
2.7.5. The comparison of property and accident *138*
2.7.6. The comparison of accident with all other predicables taken together *138*

3. Treatise 3: On categories *141*
3.1. Chapter 1: Some preliminaries *143*
3.1.1. The definition of equivocals *143*
3.1.2. The definition of univocals *145*
3.1.3. The definition of denominatives *145*
3.1.4. The division of utterances *148*
3.1.5. The division of things that there are *148*
3.1.6. A rule *150*
3.1.7. Another rule *150*
3.1.8. The division of incomplex terms into ten categories *150*
3.1.9. A property of these ten categories *151*
3.2. Chapter 2: On substance *152*
3.2.1. The division of substance and the explanation of the members of the division *152*
3.2.2. The difference between those that *are in* and that are *said of* a subject *155*
3.2.3. The comparison of primary and secondary substances *156*
3.2.4. First property: substances are not in a subject *157*
3.2.5. Second property: secondary substances and differences are univocally predicated of primary substances *159*
3.2.6. Third property: every primary substance signifies *this something* *159*
3.2.7. Fourth property: substance has no contrary *160*
3.2.8. Fifth property: no substance is susceptible of more or less *161*
3.2.9. Sixth property: every substance is susceptible of contraries by its own change *162*
3.3. Chapter 3: On quantity *164*
3.3.1. The division of quantity into continuous and discrete *164*
3.3.2. The species of discrete quantity *166*
3.3.3. The species of continuous quantity *167*
3.3.4. The division of quantity into quantity by itself and quantity by coincidence *168*
3.3.5. First property: quantity has no contrary *170*
3.3.6. Second property: no quantity is susceptible of more or less *171*
3.3.7. Third property: it is with respect to quantity that things are said to be equal or unequal *171*
3.4. Chapter 4: On relation [*ad aliquid*] *172*
3.4.1. The definitions of relatives *172*
3.4.2. The species of relatives *176*
3.4.3. First property: relations have contraries *177*

3.4.4. Second property: relatives admit of more or less *178*
3.4.5. Third property: all relatives are predicated conversely with their correlatives *178*
3.4.6. Fourth property: relatives are naturally simultaneous *180*
3.5. Chapter 5: On quality *182*
3.5.1. The description of quality *182*
3.5.2. First species: habit [*habitus*] and disposition [*dispositio*] *184*
3.5.3. Second species: natural capacity or incapacity *185*
3.5.4. Third species: passion [*passio*] or passible quality [*passibilis qualitas*] *186*
3.5.5. Fourth species: form or fixed shape of something *188*
3.5.6. The description of 'such-and-such' [*qualis*] *188*
3.5.7. First property: qualities have contraries *190*
3.5.8. Second property: quality admits of more or less *190*
3.5.9. Third property: it is with respect to quality that things are called similar or dissimilar *191*
3.5.10. A notable point *191*
3.6. Chapter 6: On action and passion *193*
3.6.1. The definition of action and passion *193*
3.6.2. The species of action and passion *195*
3.6.3. Four properties of action and passion *197*
3.7. Chapter 7: On time, place, position, and habit *199*
3.7.1. The category of time *199*
3.7.2. The category of place *203*
3.7.3. The category of position *203*
3.7.4. The category of habit *204*
3.8. Chapter 8: On the genera of opposition *206*
3.8.1. The kinds of opposition *206*
3.8.2. Relative opposition *207*
3.8.3. Contrary opposition *208*
3.8.4. Privative opposition *210*
3.8.5. Contradictory opposition *212*
3.9. Chapter 9: On motion *212*
3.9.1. The species of motion or change *212*
3.9.2. The contrariety of motion and rest *214*
3.10. Chapter 10: On 'prior', 'together', and 'to have' *215*
3.10.1. The ways in which something is said to be prior *215*
3.10.2. The ways in which things are said to be together *217*
3.10.3. The ways in which something is said to have something *217*

4. Treatise 4: On suppositions *219*
4.1. Chapter 1: The difference between signification and supposition *221*
4.1.1. The aim of the chapter *221*
4.1.2. The difference between signification and supposition *222*
4.1.3. The difference between verification and supposition *224*
4.1.4. The difference between appellation and supposition *226*
4.2. Chapter 2: Divisions of utterances signifying by convention *228*
4.2.1. The division of utterances signifying by convention into complex and incomplex utterances *228*
4.2.2. The division of incomplex utterances signifying by convention with respect to subjection and predication *229*
4.2.3. The division of incomplex utterances signifying by convention into categorematic, syncategorematic, and mixed utterances *232*
4.2.4. The division of incomplex utterances signifying by convention with respect to the incomplex or complex concepts corresponding to them *234*
4.2.5. The division of complex utterances signifying by convention into complete and incomplete *236*
4.2.6. The division of utterances into those that can and those that cannot be subjects and predicates, and into those that can and those that cannot supposit *237*
4.3. Chapter 3: The common modes and sorts of supposition *251*
4.3.1. The aim of the chapter and the division of supposition into proper and improper *251*
4.3.2. The division of supposition into material and personal *252*
4.3.3. The division of personal supposition into common and discrete *259*
4.3.4. The division of common personal supposition into natural and accidental *259*
4.3.5. The division of common personal supposition into confused and determinate *262*
4.3.6. The division of confused supposition into distributive and nondistributive *264*
4.3.7. The causes of distributive supposition *265*
4.3.7.1. The universal affirmative sign (immediately preceding the term) *265*
4.3.7.2. Negating negation *269*
4.3.7.3. Infinitizing negation *271*
4.3.7.4. Comparison *271*
4.3.7.5. Words implying negation *273*

4.3.8. The causes of nondistributive supposition *273*
4.3.8.1. The universal affirmative sign (not immediately preceding the term) *273*
4.3.8.2. Two preceding distributive parts of speech *275*
4.3.8.3. Certain special terms *278*
4.3.8.4. The mode of confusion produced by verbs such as 'know' and 'understand' *279*
4.4. Chapter 4: On the supposition and acceptation of relative terms *281*
4.4.1. The aim of the chapter *281*
4.4.2. The division of relative terms *282*
4.4.3. A common rule concerning relative terms of identity *283*
4.4.4. Another common rule concerning relative terms of identity *284*
4.4.5. Personal pronouns and relative pronouns *285*
4.4.6. Reflexive pronouns *286*
4.4.7. Possessive pronouns *287*
4.4.8. Relative pronouns of accidents *287*
4.4.9. Relative terms of diversity *288*
4.5. Chapter 5: On appellation *291*
4.5.1. The aim of the chapter *291*
4.5.2. The difference between appellation on the side of the subject and the side of the predicate *291*
4.5.3. The appellation of concept [*appellatio rationis*] in intentional contexts *294*
4.5.4. The appellation of some specific terms *297*
4.6. Chapter 6: On ampliation and restriction *298*
4.6.1. The definition of *status* *298*
4.6.2. Ampliation beyond the status *299*
4.6.3. Restriction within the status *300*
4.6.4. The alienation of the status *301*
4.6.5. The alienation of supposition and appellation *302*
4.6.6. The total removal of supposition *302*

5. Treatise 5: On syllogisms *303*
5.1. Chapter 1: Some general preliminaries *305*
5.1.1. The definition of a categorical proposition and of its terms *305*
5.1.2. On *dici de omni* and *dici de nullo* *306*
5.1.3. The definition of syllogism *308*
5.1.4. The propositions of a syllogism *310*
5.1.5. The syllogistic terms *310*
5.1.6. On syllogistic figure *310*

5.1.7. On syllogistic mode *311*
5.1.8. Some general rules *312*
5.2. Chapter 2: The modes of the three figures *319*
5.2.1. The number of modes in each figure *319*
5.2.2. A mnemonic verse *320*
5.2.3. Explanation of the verse insofar as it indicates the formation of syllogisms *321*
5.2.4. Explanation of the verse insofar as it indicates the reduction of imperfect to perfect syllogisms *321*
5.3. Chapter 3: About the first figure *324*
5.3.1. Two general rules of the first figure *324*
5.3.2. The first four modes of the first figure *(Barbara, Celarent, Darii, Ferio) 325*
5.3.3. About *Baralipton, Celantes,* and *Dabitis 328*
5.3.4. About *Fapesmo* and *Frisesomorum 328*
5.4. Chapter 4: About the second figure *329*
5.4.1. Three general rules of the second figure *329*
5.4.2. The first three modes of the second figure (*Cesare, Camestres,* and *Festino*) *330*
5.4.3. The fourth mode *(Baroco) 331*
5.5. Chapter 5: About the third figure *332*
5.5.1. Two general rules of the third figure *332*
5.5.2. The first four modes *333*
5.5.3. The two remaining modes *334*
5.6. Chapter 6: About non-mixed modal syllogisms *335*
5.6.1. Recapitulation of some points about modal propositions *335*
5.6.2. Syllogisms consisting of composite modals *337*
5.6.3. Some assumptions concerning divided modals *339*
5.6.4. Syllogisms with both premises about possibility *340*
5.6.5. Syllogisms with both premises about necessity *343*
5.6.6. Syllogisms consisting of propositions about contingency *344*
5.6.7. Syllogisms consisting of propositions about truth and falsity *346*
5.6.8. Syllogisms consisting of some other modal propositions *347*
5.7. Chapter 7: On mixed modal syllogisms *350*
5.7.1. Six rules concerning mixed modal syllogisms *350*
5.7.2. Mixing the assertoric with the possible premises *352*
5.7.3. Mixing the assertoric with the necessary premises *355*
5.7.4. Mixing the assertoric with the contingent premises *359*
5.7.5. Mixing the possible with the necessary *361*
5.7.6. Mixing the possible with the contingent premises *363*

5.7.7. Mixing the necessary with the contingent premises *364*
5.8. Chapter 8: On syllogisms with oblique terms and on reduplicative syllogisms *365*
5.8.1. The verb 'belongs' [*inest*] as a copula *365*
5.8.2. Syllogisms with oblique terms that are similar to the first figure *366*
5.8.3. Syllogisms with oblique terms that are similar to the second figure *368*
5.8.4. Syllogisms with oblique terms that are similar to the third figure *369*
5.8.5. About reduplicative syllogisms *370*
5.9. Chapter 9: About syllogisms with infinite terms *372*
5.9.1. A division of syllogisms using infinite terms *372*
5.9.2. A rule *373*
5.9.3. Another rule *375*
5.10. Chapter 10: On the powers of syllogisms *376*
5.10.1. The aim of this chapter *376*
5.10.2. The syllogism concluding to several conclusions *377*
5.10.3. The syllogism concluding to truth from falsehoods *379*
5.10.4. The circular syllogism *380*
5.10.5. The conversive syllogism *382*
5.10.6. The syllogism *per impossibile* *384*
5.10.7. The syllogism from opposites *386*

6. Treatise 6: On dialectical loci *389*
6.1. Chapter 1: Some general preliminaries *391*
6.1.1. The aim of the treatise *391*
6.1.2. The definition of argument and argumentation *392*
6.1.3. The description of proposition, question, and conclusion *393*
6.1.4. The division of argumentation into its species *393*
6.1.5. The reduction of other species of argumentation to syllogism *398*
6.2. Chapter 2: Description of *locus* and some classifications of loci *400*
6.2.1. The description of *locus* *400*
6.2.2. The division of locus into the maxim [*locus maxima*] and the difference of the maxim [*locus differentia maximae*] *401*
6.2.3. The division of the difference of the maxim into intrinsic, extrinsic, and intermediate *402*
6.2.4. The division of intrinsic locus into the locus from substance and the locus from the concomitants of substance *406*
6.3. Chapter 3: On loci from substance *407*

6.3.1. The division of loci from substance and the descriptions of its members *407*
6.3.2. The loci from definition and from what is defined *412*
6.3.3. The loci from description and from what is described *413*
6.3.4. The loci from interpretation and from what is interpreted *414*
6.3.5. Some loci reducible to the above *415*
6.4. Chapter 4: On loci from the concomitants of substance *419*
6.4.1. The description and the division of the locus from the concomitants of substance *419*
6.4.2. The description and division of loci from whole and part *421*
6.4.3. The loci from the universal whole and its part *421*
6.4.4. The loci from the integral whole and its part *426*
6.4.5. The loci from the whole-in-quantity and its part or parts *434*
6.4.6. The loci from the whole-in-mode and its parts *436*
6.4.7. The loci from the whole-in-place and its part *438*
6.4.8. The loci from the whole-in-time and its part *439*
6.4.9. The description and division of loci from cause and effect *440*
6.4.10. The loci from the efficient cause and its effect *441*
6.4.11. The loci from the material cause and its effect *444*
6.4.12. The loci from the formal cause and its effect *445*
6.4.13. The loci from the final cause and its effect *446*
6.4.14. The locus from generation *449*
6.4.15. The locus from corruption *450*
6.4.16. The loci from uses *453*
6.4.17. The loci from concurrent accidents *454*
6.4.18. Some loci from the concomitants of substance other than the ones mentioned *456*
6.5. Chapter 5: On extrinsic loci *459*
6.5.1. Some divisions of extrinsic loci *459*
6.5.2. The locus from relatives *460*
6.5.3. The locus from contraries *463*
6.5.4. The locus from privative opposites *466*
6.5.5. The locus from contradictories *467*
6.5.6. The loci from greater and lesser *472*
6.5.7. The locus from similarity *475*
6.5.8. The locus from proportion *475*
6.5.9. The loci from transumption *478*
6.5.10. The locus from authority *480*
6.5.11. Some other loci, which are not listed by the author *482*
6.6. Chapter 6: On intermediate loci *485*
6.6.1. The aim of the chapter *485*

6.6.2. The locus from conjugates *486*
6.6.3. The locus from cases *488*
6.6.4. The locus from division *489*

7. Treatise 7: On fallacies *493*
7.1. Chapter 1: General remarks *495*
7.1.1. The description of real elenchus and sophistic elenchus *495*
7.1.2. The art of sophistry *496*
7.1.3. The description of disputation *498*
7.1.4. The genera of disputation *499*
7.1.5. The description of tactical goal [meta] *501*
7.1.6. The number of metas *502*
7.1.7. The description of fallacy *504*
7.2. Chapter 2: On the division of fallacies *506*
7.2.1. The division of fallacies into those 'of words' [*in dictione*] and those 'apart from words' [*extra dictionem*] *506*
7.2.2. The general basis for distinguishing fallacies of words [*in dictione*] *509*
7.2.3. The three kinds of ambiguity [*multiplicitas*] of words *510*
7.2.4. A sixfold subdivision of the members of the previous division, yielding the six fallacies of words *511*
7.2.5. The distinction of seven fallacies apart from words *512*
7.3. Chapter 3: On fallacies of words *515*
7.3.1. The aim of the chapter *515*
7.3.2. The fallacy of equivocation *516*
7.3.3. The fallacy of amphiboly *516*
7.3.4. The modes of the previous two fallacies *517*
7.3.5. The ways in which the fallacies of composition and division resemble each other *524*
7.3.6. The differences between the fallacies of composition and division *525*
7.3.7. The modes of the fallacies of composition and division *526*
7.3.8. The fallacy of accent *532*
7.3.9. The fallacy of figure of words *534*
7.3.10. The modes of the fallacy of figure of words *535*
7.4. Chapter 4: On fallacies apart from words *548*
7.4.1. The fallacy of accident *548*
7.4.2. The fallacy *secundum quid et simpliciter* *554*
7.4.3. The fallacy of *ignorantia elenchi* *563*
7.4.4. The fallacy of *petitio principii* *570*
7.4.5. The fallacy of the consequent *573*

7.4.6. The fallacy of non-cause as cause *579*
7.4.7. The fallacy of many questions as one *584*
7.4.8. The number of fallacies *595*
7.5. Chapter 5: On how the fallacies are naturally capable of leading to the metas *596*
7.5.1. The common features of all fallacies *596*
7.5.2. Which fallacy appears to lead most properly to refutation *597*
7.5.3. Which fallacy appears to lead most properly to falsity or impossibility *598*
7.5.4. Which fallacy appears to lead most properly to implausibility *598*
7.5.5. Which fallacy appears to lead most properly to solecism *599*
7.5.6. Which fallacy appears to lead most properly to redundancy [*nugatio*] *600*
7.6. Chapter 6: On the solution of paralogisms *602*
7.6.1. On the perfect solution of a sophistic argument *602*
7.6.2. The solution of the fallacies of equivocation and amphiboly *603*
7.6.3. The solution of the fallacies of composition and division *605*
7.6.4. The solution of the fallacy of figure of words *606*
7.6.5. The solution of the fallacy of accident *607*
7.6.6. The solution of the fallacy *secundum quid et simpliciter* *607*
7.6.7. The solution of *ignorantia elenchi* *608*
7.6.8. The solution of *petitio principii* *609*
7.6.9. The solution of the fallacy of the consequent *609*
7.6.10. The solution of the fallacy of non-cause as cause *610*
7.6.11. The solution of the fallacy of many questions as one *610*

8. Treatise 8: On demonstrations *613*
First subject matter: On divisions *615*
8.1. Preface *615*
8.1.1. On the art of division *615*
8.1.2. On division and composition in general *616*
8.1.3. How parts are said to be divided *616*
8.1.4. On the two kinds of wholes and parts *617*
8.1.5. On the various divisions of wholes *619*
8.1.6. On predicable wholes and their parts *620*
8.1.7. On complete and incomplete divisions *623*
8.1.8. On divisions in a less proper sense *628*
Second subject matter: On definitions *631*
8.2. Introduction *631*
8.2.1. The eight properties of the definitum and of the definition *631*

8.2.2. On the four modes of definition *635*
8.2.3. On nominal definition *635*
8.2.4. On quidditative definition *638*
8.2.5. On causal definition *655*
8.2.6. On description *659*
8.2.7. On composite definitions *662*
Third subject matter: On demonstrations *664*
8.3. Introduction *664*
8.3.1. On this whole subject matter in general *664*
8.3.2. On the four knowable questions *665*
8.3.3. On the questions concerning the middle term *670*
8.3.4. The constituents of a demonstration *673*
8.3.5. On the things of which one should have precognition *675*
8.3.6. What constitutes the unity of science *681*
8.3.7. Whether the premises are known temporally prior to the conclusion *687*
8.4. The comparison of demonstration and dialectical argument, and of knowledge and opinion *694*
8.4.1. The agreements between demonstration and dialectical argument *695*
8.4.2. Their differences *697*
8.4.3. The agreements between knowledge and opinion *703*
8.4.4. Their differences *706*
8.5. On the first indemonstrable principles of demonstrations *711*
8.5.1. That there are such principles *711*
8.5.2. Their number or multitude *712*
8.5.3. On the necessity and evidentness of some principles *717*
8.5.4. How they are cognized *720*
8.6. On *dici de omni* [being predicated of everything], *per se* [by itself], and the universal, or *secundum quod ipsum* [with respect to what the thing is] *724*
8.6.1. On *dici de omni* *725*
8.6.2. On the three modes of perseity *726*
8.6.3. On the first mode of perseity *730*
8.6.4. On 'universal', or *secundum quod ipsum* *736*
8.7. On the various distinctions of demonstrations *738*
8.7.1. On demonstrations in general *739*
8.7.2. On categorical and hypothetical demonstrations *740*
8.7.3. On ostensive and indirect demonstrations *741*
8.7.4. On affirmative and negative demonstrations *742*
8.7.5. On the division of demonstrations with respect to quantity *743*

8.7.6. On universal and particular demonstrations *746*
8.7.7. On necessary and contingent demonstrations *746*
8.7.8. Some other divisions [of demonstrations] *748*
8.7.9. On enduring and doctrinal demonstrations *749*
8.7.10. On *propter quid* and *quia* demonstrations *753*
8.8. On *propter quid* demonstrations *754*
8.8.1. What should be the cause in such a demonstration, and of what kind and in what way *754*
8.8.2. Whether the definition of knowledge is a correct definition of knowledge *propter quid* *759*
8.8.3. Some corollaries *760*
8.8.4. Another definition of *propter quid* demonstration *762*
8.8.5. Whether one can demonstrate the effect *propter quid* by all genera of causes *765*
8.8.6. On mathematical demonstrations *766*
8.9. On demonstrations *quia* *770*
8.9.1. On the various modes of demonstrations *quia* *771*
8.9.2. In what way knowledge *propter quid* and *quia* concerning the same thing pertains to the same science or to different sciences *772*
8.9.3. On the circularity between *propter quid* and *quia* *777*
8.9.4. On the circularity between several *propter quid* demonstrations *780*
8.9.5. On the circularity between several *quia* demonstrations *781*
8.10. On some other kinds of demonstration *783*
8.10.1. The division of this chapter *783*
8.10.2. On indirect demonstration *784*
8.10.3. On negative demonstration *785*
8.10.4. On immediate and indemonstrable propositions *786*
8.10.5. On the demonstration of a contingent conclusion *787*
8.10.6. On the demonstration concerning the past or the future *788*
8.11. On the comparison of various demonstrations *790*
8.11.1. Four common properties *791*
8.11.2. The property [*proprietas*] of demonstration in the strict sense *792*
8.11.3. On the comparison of *propter quid* demonstration to others *793*
8.11.4. On the most powerful demonstrations *800*
8.11.5. On the power of universal and particular demonstrations *802*
8.11.6. On the power of affirmative and negative demonstrations *806*
8.11.7. On the power of ostensive and indirect demonstrations *807*
8.12. How knowable questions should be settled *807*

8.12.1. That every question asks about a predicate of a subject *808*
8.12.2. On the various species of knowable questions *810*
8.12.3. On the question 'What is it?' *810*
8.12.4. On settling the question 'What is it?' *813*
8.12.5. On settling the question 'For what reason is it?' *816*
8.12.6. On the questions 'How is it?' and 'Is it?' *818*

Sophismata *821*
Chapter 1: On the signification of terms and propositions *823*
First sophism: Every spoken proposition is true *824*
Second sophism: A horse is a donkey *824*
Third sophism: God does not exist *825*
Fourth sophism: The name 'chimera' signifies nothing *826*
Fifth sophism: Complexly signifiables are chimeras *829*
Sixth sophism: Nobody lies *831*
First conclusion *831*
Second conclusion *832*
Third conclusion *833*
Fourth conclusion *834*
Fifth conclusion *834*
Sixth conclusion *835*
Seventh conclusion *836*
Eighth conclusion *836*
Ninth conclusion *837*
Tenth conclusion *838*
Eleventh conclusion *838*
Replies to the sophisms *841*
To the first sophism [Every spoken proposition is true] *841*
To the second sophism [A horse is a donkey] *841*
To the third sophism [God does not exist] *841*
To the fourth sophism [The name 'chimera' signifies nothing] *843*
To the fifth sophism [Complexly signifiables are chimeras] *843*
To the sixth sophism [Nobody lies] *845*
Chapter 2: On the causes of the truth and falsity of propositions *845*
First sophism: Aristotle's horse does not exist *846*
Second sophism: Aristotle's horse walked *846*
Third sophism: A chimera is a chimera *847*
Fourth sophism: A vacuum is a place not filled with body *847*
Fifth sophism: A man is a donkey *847*
Sixth sophism: I say [something] false *848*
First conclusion *849*

Second conclusion *850*
Third conclusion *850*
Fourth conclusion *852*
Fifth conclusion *852*
Sixth conclusion *853*
Seventh conclusion *853*
Eighth conclusion *854*
Ninth conclusion *854*
Tenth conclusion *855*
Eleventh conclusion *856*
Twelfth conclusion *857*
Thirteenth conclusion *858*
Fourteenth conclusion *858*
Replies to the sophisms *860*
To the first sophism [Aristotle's horse does not exist] *860*
To the second sophism [Aristotle's horse walked] *861*
To the third sophism [A chimera is a chimera] *861*
To the fourth sophism [A vacuum is a place not filled with body] *862*
To the fifth sophism [A man is a donkey] *862*
To the sixth sophism [I say (something) false] *862*
Chapter 3: On supposition *863*
First sophism: That God is unjust is to be denied by all the faithful *863*
Second sophism: You are a donkey *863*
Third sophism: [A] man is a species *864*
Fourth sophism: [A] genus covers more than a most general genus *865*
Fifth sophism: [A] name is trisyllabic *865*
Replies to the sophisms *868*
To the first sophism [That God is unjust is to be denied by all the faithful] *868*
To the second sophism [You are a donkey] *869*
To the third sophism [(A) man is a species] *869*
To the fourth sophism [(A) genus covers more than a most general genus] *870*
To the fifth sophism [(A) name is trisyllabic] *870*
Sixth sophism: There always was some man *871*
Seventh sophism: Some donkey every man sees *871*
Eighth sophism: Every man is an animal *871*
Ninth sophism: Every man an animal is not *872*

Replies to the sophisms *874*
To the sixth sophism [There was always some man] *874*
To the seventh sophism [Some donkey every man sees] *874*
To the eighth sophism [Every man is an animal] *875*
To the ninth sophism [Every man an animal is not] *875*
Chapter 4: On appellation *876*
FIRST PART *876*
First sophism: Socrates and a white [thing] are the same *876*
Second sophism: Today you ate raw [meat] *877*
Third sophism: Something white will be black *877*
Fourth sophism: An old man will be a boy *878*
Fifth sophism: Socrates will be running tomorrow *878*
Sixth sophism: I saw Peter and Robert *879*
On the appellation of terms *879*
Replies to the sophisms *884*
To the first sophism [Socrates and a white (thing) are the same] *884*
To the second sophism [Today you ate raw (meat)] *886*
To the third sophism [Something white will be black] *888*
To the fourth sophism [An old man will be a boy] *888*
To the fifth sophism [Socrates will be running tomorrow] *888*
To the sixth sophism [I saw Peter and Robert] *889*
SECOND PART *889*
Seventh sophism: This dog is your father *889*
Eighth sophism: Socrates' whiteness is his similarity to Plato *890*
On the appellation of appellative terms *890*
Replies to the sophisms *891*
To the seventh sophism [This dog is your father] *891*
To the eighth sophism [Socrates' whiteness is his similarity to Plato] *891*
THIRD PART *892*
Ninth sophism: You know the one approaching *892*
Tenth sophism: You know that the coins in my purse are even in number *893*
Eleventh sophism: You believe that you are a donkey *894*
Twelfth sophism: Socrates appears to be other than what he is *894*
On some special modes of appellation *895*
Thirteenth sophism: Whoever knows that every triangle has three angles equal to two right angles [every isosceles knows to have three angles equal to two right angles] *898*

Fourteenth sophism: Socrates the astronomer knows some stars to be above our hemisphere *900*
Replies to the sophisms *902*
To the ninth sophism [You know the one approaching] *902*
To the tenth sophism [You know that the coins in my purse are even in number] *904*
To the eleventh sophism [You believe that you are a donkey] *904*
To the twelfth sophism [Socrates appears to be other than what he is] *905*
Fifteenth sophism: I owe you a horse *907*
Chapter 5: On ampliation and restriction *914*
First sophism: Some horse does not exist *914*
Second sophism: No man is dead *916*
Third sophism: Antichrist is *917*
Fourth sophism: Every old horse will die *919*
Fifth sophism: Something corrupted is to be generated *920*
Sixth sophism: Young Socrates was going to argue *921*
Seventh sophism: A non-being is understood *923*
Eighth sophism: Everything that will be is *925*
Ninth sophism: Man and risible are convertible *926*
First conclusion *927*
Second conclusion *927*
Third conclusion *928*
Fourth conclusion *928*
Fifth conclusion *928*
Tenth sophism: Socrates will die today *929*
Chapter 6: On the fact that utterances signify by convention *929*
First sophism: You will be a donkey *930*
First conclusion *930*
Second conclusion *931*
Third conclusion *931*
Fourth conclusion *931*
Fifth conclusion *932*
Sixth conclusion *933*
Second sophism: Ba will be baptized *933*
Third sophism: The utterance 'A' is a proposition *935*
Fourth sophism: It is within our power that a man should be a donkey *936*
Fifth sophism: You are a donkey or you are not a man *938*
Sixth sophism: This proposition can be true: 'A man is a non-man' *939*

Seventh sophism: You do not know whether 'A man is a donkey' is true *940*
Chapter 7: On the measure according to which a proposition is true or false *941*
First sophism: No spoken proposition is true *941*
Second sophism: Nobody can contradict my proposition *942*
Third sophism: The proposition 'Socrates is sitting' is true at a time throughout which Socrates is not sitting *943*
Fourth sophism: This conjunction is true: 'Socrates is sitting and Socrates is not sitting' *944*
Fifth sophism: This conjunction is true: 'Aristotle argues and Antichrist preaches' *946*
Sixth sophism: At every time Socrates is running *947*
Seventh sophism: The same spoken or written proposition is true and false for people of the same language and without a new imposition or obligation *948*
Eighth sophism: Whatever moves moved earlier *949*
Ninth sophism: No change is instantaneous *950*
Chapter 8: On self-referential propositions *952*
First sophism: Every proposition is affirmative; therefore, no proposition is negative *952*
First conclusion *954*
Second conclusion *954*
Third conclusion *954*
Fourth conclusion *955*
Fifth conclusion *955*
Second sophism: No proposition is negative; therefore, some proposition is negative *956*
Third sophism: Every man runs; therefore, a donkey runs *958*
Fourth sophism: I say that a man is a donkey *959*
Fifth sophism: Whatever Socrates hears, that Plato utters *961*
Sixth sophism: It is true to declare a man to be an animal *962*
Seventh sophism: Every proposition is false *965*
Eighth sophism: Plato says something false *971*
Ninth sophism: Socrates says something true *974*
Tenth sophism: There are as many true propositions as false ones *976*
Eleventh sophism: I say something false *977*
Twelfth sophism: God exists and some conjunction is false *980*
Thirteenth sophism: Socrates knows the proposition written on the wall to be doubtful to him *981*

Fourteenth sophism: Socrates sits or a disjunctive [proposition] written on the wall is doubtful to Plato *984*
Fifteenth sophism: To someone is propounded a proposition doubtful to him *987*
Sixteenth sophism: You will respond negatively *991*
Seventeenth sophism: You will throw me in the water *993*
Eighteenth sophism: Socrates wants to eat *994*
Nineteenth sophism: Socrates curses Plato *995*
Twentieth sophism: Socrates wishes Plato evil *996*

Bibliography *999*
Index *1017*

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I dedicate this work to my wife, Judit, and my son, Greg, *sine quibus non.*

Introduction

The Summulae of John Buridan

John Buridan [Iohannes Buridanus] (1295/1305–1358/61) was undoubtedly one of the most influential philosophers of the late Middle Ages. Nevertheless, as is usual with medieval authors, we do not know much about his life. His date and place of birth are uncertain. He was born somewhere in the diocese of Arras in Picardy, sometime around 1300. In his youth, he studied in the Collège Lemoine in Paris, probably as a recipient of a stipend for needy students. Later he joined the Arts Faculty at the University of Paris, where he obtained his license to teach sometime after 1320. During his long career at the Arts Faculty, Buridan was a highly respected Arts Master who was twice appointed rector of the university, in 1327/28 and 1340. He never moved on to the "graduate" or "professional schools" of theology, law, or medicine, which was the usual career path for professors of his time. Still, he was famous, unusually well off for a university professor (receiving at least three different benefices), and a popular public person, who according to (unfounded) contemporary gossip even had an affair with the queen (famously alluded to in Villon's *Ballade des dames du temps jadis*). Buridan's time of death is also uncertain. He may have died in the plague of 1358, but he certainly did not live beyond 1361, when one of his benefices went to another person.[1]

Buridan's work was arguably one of the most powerful forces behind the emergence of late medieval nominalism, eventually leading to the separation of the two major ways of doing philosophy and theology in the fifteenth century: the realist *via antiqua* (the old way) and the nominalist *via moderna* (the modern way).[2] To be sure, Buridan's unwavering nominalism was never coupled with the "revolutionary" zeal of William Ockham or Nicholas of

1. For more on Buridan's life and the influence of his work see the relevant titles in the bibliography, especially B. Michael, "Johannes Buridan: Studien zu seinem Leben, seinen Werken und zur Rezeption seiner Theorien im Europa des späten Mittelalters, Inaugural-Dissertation," 2 vols. (Ph.D. diss., Freien Universität Berlin, 1985); E. Faral, *Jean Buridan: Maître és arts de l'Université de Paris* (Paris: Imprimerie Nationale, 1949), pp. 462–605.

2. For a good summary of the history of the separation of the "ways" and for further references see W. L. Moore, "Via Moderna," in *Dictionary of the Middle Ages,* ed. J. R. Strayer (New York: Scribner, 1989), *12:*406–9.

Autrecourt.[3] It was precisely Buridan's characteristically calm and pragmatic philosophical style, however, that could establish nominalism as a viable alternative in late medieval philosophy. As T. K. Scott, the first English translator of the *Sophismata,* put it: "What Ockham had begun, Buridan continued, but with an even clearer realization of ends in view. . . . If Ockham initiated a new way of doing philosophy, Buridan is already a man of the new way. If Ockham was the evangel of a new creed, Buridan is inescapably its stolid practitioner. . . . He is a nominalist (a much more radical one than Ockham), but he is less concerned to defend nominalism than to use it. Elaboration of philosophical overviews is replaced by care for important philosophical detail."[4]

The historical influence of Buridan's works on late medieval and early modern thought can hardly be overestimated. Not only did his work have a lasting impact at his home university, the University of Paris, but through the works and teaching of his students his ideas spread all over Europe, from Scotland to Poland, from Germany to Italy and Spain. Paris soon became dominated by Buridan's nominalist logic, owing in particular to the activity of Peter of Ailly (1350–1420), chancellor of the university and a staunch defender of the nominalist approach.[5] Indeed, Buridan's approach became so dominant that in 1474 King Louis XI felt compelled to issue a decree banning the teaching of nominalism in favor of the great realists Albert, Aquinas, Scotus, Bonaventure, Alexander of Hales, and Giles of Rome. The ban, as usual, produced just the opposite of its desired effect, yielding an even stronger rise in interest in nominalist logic, so that the decree had to be rescinded in 1481.[6] But Buri-

3. For detailed analyses of the complicated doctrinal relationships between these authors, see E. A. Moody, "Ockham, Buridan, and Nicholas of Autrecourt," in *Inquiries into Medieval Philosophy,* ed. J. Ross (Westport, Conn.: Greenwood, 1971), pp. 275–315; T. K. Scott, "Nicholas of Autrecourt, Buridan and Ockhamism," in *Journal of the History of Philosophy* 9 (1971): 15–41; W. J. Courtenay and K. Tachau, "Ockham, Ockhamists and the English-German Nation at Paris, 1339–1341," *History of Universities* 2 (1982): 53–96; W. J. Courtenay, "The Reception of Ockham's Thought at the University of Paris," in *Preuve et raisons à l'Université de Paris,* ed. Z. Kaluza and P. Vignaux (Paris: Vrin, 1984), pp. 43–64; W. J. Courtenay, "Was There an Ockhamist School?" in *Philosophy and Learning: Universities in the Middle Ages,* ed. M. J. F. M. Hoenen, J. H. J. Schneider, and G. Wieland (Leiden: Brill, 1995), pp. 263–92.

4. John Buridan, *Sophisms on Meaning and Truth,* trans. T. K. Scott (New York: Appleton-Century-Crofts, 1966), p. 13.

5. Peter of Ailly's two important logical works exist in English translation with an excellent introduction and ample notes: Peter of Ailly, *Concepts and Insolubles: An Annotated Translation,* trans. P. V. Spade. (Dordrecht: Reidel, 1980).

6. For more details on the circumstances and contents of the ban see F. Ehrle, "Der Senten-

dan's influence was quite soon to be felt in more remote parts of Europe as well. Students (or younger colleagues) of Buridan such as Albert of Saxony, the first rector of the University of Vienna (founded in 1365), and Marsilius of Inghen, rector of the University of Heidelberg (founded in 1386), quite early implemented Buridan's ideas in the newly established universities of central Europe, where they reigned supreme for the next two centuries, as the wealth of the surviving manuscripts of Buridan's works in that region also testifies.[7] The oldest statutes of the University of Cologne (opened in 1389) prescribed for bachelors the reading of Buridan's or Peter of Spain's *Summulae,* although in the first quarter of the fifteenth century the realist faction of the faculty prevailed and remained strong throughout the century. The influence of Buridan and his fellow nominalists was equally strong or stronger, however, in Erfurt, Leipzig, Rostock, and other German universities established in the fifteenth century.[8] In general, if nominalism was not the dominant doctrine for some period at these universities, then it either coexisted with the *via antiqua* in the curricula, or it was at least a theoretical alternative that realists definitely had to reckon with. In Italy, Buridan's nominalism, along with the similar teachings of his students and of several English logicians, was made known through the works of Paul of Venice and his student Paul of Pergula in Padua. In Spain, Alcalá and Salamanca came to be the sixteenth-century strongholds of nominalism, as a result of the return of a number of Spanish scholars to their homeland as teachers upon completing their studies in Paris.[9] But the spread of Buridan's ideas was not stopped by the English Channel, either. Several influential Scottish philosophers, theologians, and logicians of the period studied in Paris, so at the university of St. Andrews the *doctrina Buridani* was

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zenkommentar Peters von Candia, des Pisaner Papstes Alexanders V.," *Franziskanische Studien* 9 (1925). For the impact of the ban on the spreading of Buridan's ideas see A. L. Gabriel, *The Paris Studium: Robert of Sorbonne and His Legacy* (Frankfurt am Main: Verlag Josef Knecht, 1992), esp. pp. 121–35.

7. Compare M. Markowski, "Johannes Buridans Kommentar zu Aristoteles' Organon in Mitteleuropas Bibliotheken," in *The Logic of John Buridan,* ed. J. Pinborg (Copenhagen: Museum Tusculanum, 1976), pp. 9–20; M. Markowski, *Buridanica quae in codicibus manu scriptis bibliothecarum Monacensium asservantur* (Breslau: Ossolineum, 1981); R. Palacz, "Les traités de Jean Buridan," conservés dans les manuscrits de la Bibliothèque du Chapitre à Prague," *Mediaevalia Philosophica Polonorum* 14 (1970): 53–54.

8. Compare M. Markowski, "L'influence de Jean Buridan sur les universités d'Europe centrale," in *Preuve et raisons à l'Université de Paris,* ed. Z. Kaluza and P. Vignaux (Paris: Vrin, 1984), pp. 149–163; Gabriel, *Paris Studium,* chap. 2, pp. 135–67.

9. See E. J. Ashworth, *Language and Logic in the Post-Medieval Period* (Dordrecht: Reidel, 1974), pp. 4–8.

exclusively preferred to the *doctrina Alberti* until Bishop Wardlaw persuaded the faculty in 1438 to allow the *via Alberti.*[10]

Despite their tremendous influence on late Scholastic thought, however, the general decline of Scholasticism and the emergence of a new scientific and philosophical attitude in the seventeenth and eighteenth centuries did not spare Buridan's works. Although there were scattered publications of his works, most notably of his *Summulae,* as late as in 1637, and some even in 1740, they gradually came to be looked on with scorn, along with the rest of the Scholastic output, as containing useless cavils not worthy of serious philosophical consideration.

That in this way Buridan's works were finally doomed to near-oblivion by the anti-Scholastic sentiments of early modern philosophy cannot be taken as evidence of their lack of genuine theoretical importance any more than the general decline of logic in that period could be taken to show the irrelevance of logic to philosophical analysis. As Peter King, the first English translator of Buridan's *Treatise on Suppositions* and *Treatise on Consequences* put it: "Buridan's medieval voice speaks directly to modern concerns: the attempt to create a genuinely nominalistic semantics; paradoxes of self-reference; the nature of inferential connections; canonical language; meaning and reference; the theory of valid argument. It is to be hoped that Buridan can reclaim his lost reputation among contemporary philosophers for his penetrating and incisive views on these and other matters."[11]

The relevance of Buridan's ideas to contemporary philosophical concerns is also shown by a steadily growing number of books and scholarly papers published on his work, produced not only by historians of medieval philosophy but also by historically minded philosophers who regard Buridan's ideas as providing genuine clues to problems of contemporary philosophy.

The present volume contains the first annotated translation of the entire text of John Buridan's monumental contribution to medieval logic, the *Summulae de Dialectica.* The name *Summulae* is the abbreviation of *Summulae de Dialectica,* the title most commonly used to refer to Buridan's work.[12] But there are other variants of the title as well. Hubien's text, which served as the primary basis for this translation, bears the title *Lectura de Summa Logicae.* The

10. See H. Rashdall, *The Universities of Europe in the Middle Ages* (Oxford: Clarendon, 1936), 2:305. Compare A. Broadie, *George Lokert, Late-Scholastic Logician* (Edinburgh: Edinburgh University Press, 1983); A. Broadie, *The Circle of John Mair: Logic and Logicians in Pre-Reformation Scotland* (Oxford: Clarendon; New York: Oxford University Press, 1985).

11. P. King, *Jean Buridan's Logic* (Dordrecht: Reidel, 1985), p. 4.

12. Indeed, this is how Buridan himself refers to the first eight treatises of his work in the *Sophismata,* e.g., chap. 1, To the third sophism, P.2.2, chap. 3, Fifth sophism, P.1, etc.

term *summa* (lit., sum, summary), which refers to a rigorous, systematic treatment of a whole field by a scholastic master, is notoriously difficult to translate (in fact, it normally goes untranslated, as in Aquinas's *Summa Theologiae*). In any case, the term *summulae* is the plural, diminutive form of *summa,* which indicates compendiousness, so *Summulae de Dialectica* might be rendered as "Compendia of Dialectics" (indeed, the 1499 Venice edition bears the title *Compendium Totius Logicae,* "Compendium of the Entire [Art of] Logic"). The title of Hubien's text, which may be rendered as "Lectures on the Summa of Logic," indicates that Buridan's *Summulae* was the textbook he wrote and used for his logic courses over the years of his long teaching career at Paris. In fact, the term *summulae* was widely used to refer in general to the short, summary treatments of various subjects in logic that were the standard by-products of the teaching activity of Masters of Arts. Accordingly, practitioners of the art expounded in these *summulae* were often referred to as *summulistae.*

The whole work consists of nine treatises (the ninth of which, the *Sophismata,* is sometimes treated by Buridan as the last part of the *Summulae,* sometimes as an independent treatise), providing a systematic account of Buridan's nominalist logic, which also incorporates his intriguing treatment of several issues we would classify as belonging to the fields of the philosophy of science and the philosophy of mind and language.

The first eight treatises of the *Summulae* ostensibly provide Buridan's running commentary on Peter of Spain's *Tractatus* (also known as *Summulae Logicales*).[13] But Buridan in fact almost completely rewrote and reorganized the main text for his commentary, apparently retaining only the parts of Peter's text that he found both essential and theoretically acceptable, while adding his own text where Peter's text did not cover some important material (as in the case of the entire eighth treatise, on divisions, definitions and demonstrations), or replacing Peter's text with his own where his views radically differed from those of the realist master (as in the case of the entire fourth treatise, on the properties of terms).[14]

Indeed, Buridan's main text was probably regarded as quite original, de-

13. Peter of Spain, *Tractatus, called afterwards Summule logicales,* ed. L. M. de Rijk (Assen: van Gorcum, 1972). As Professor de Rijk in the introduction to his critical edition of Treatise 8 remarks: "It should be noted, incidentally, that there are convincing arguments to identify the author of the famous textbook with a Spanish Black Friar rather than with the Portuguese Pope John XXI. See Angel d'Ors, 'Petrus Hispanus O.P., Auctor Summularum' in *Vivarium* 35 (1997), pp. 21–71."

14. For detailed comparisons of Peter's and Buridan's texts and their doctrinal contents, see the excellent introductory essays of the critical editions of the individual treatises of Buridan's *Summulae.*

serving a commentary in its own right; thus, early printed editions of the *Summulae* provided only Buridan's main text, replacing his commentary with the more concise commentary of John Dorp. As a result, Buridan's entire work has so far never appeared in a printed edition.

In the midst of the recent surge of interest in medieval logic, however, Buridan's text was made available for interested scholars all over the world through the efforts of Hubert Hubien,[15] who produced a working text of the *Summulae.* This text has been widely circulated among Buridan scholars (in the form of ASCII files on computer diskettes). Professor Hubien's text of the *Summulae,* although it lacked a critical apparatus and was based on relatively few but carefully selected manuscripts, had the virtue of (near) completeness[16] and the reputation of being reliable enough for the purpose of research into Buridan's logic.

But there was still an obvious need for a critical edition of the *Summulae.* In 1986 a team of scholars formed the Buridan Society with the aim of producing such a volume.[17] So far only treatises 2, 3 and 4 have appeared.[18]

Therefore, when the opportunity first arose for preparing an English translation of the entire *Summulae* for the Yale Library of Medieval Philosophy, in 1994, the obvious decision was to base the translation on the Hubien text and to contact the editors of the individual treatises to clarify and emend the occasional obscure points of that text. Thus, the translation of the first seven treatises is still primarily based on the Hubien text, collated with, and emended where necessary on the basis of, the available critical texts. On the other hand, treatise 8 in the Hubien text was incomplete. Luckily, however, L. M. de Rijk's work on this treatise coincided with this project; thus the translation of treatise 8 is based on de Rijk's (as yet not entirely finalized) text. The translation of treatise 9 is also based on the critical text, prepared by F. Pironet.

Hubien's text does not contain section headings, but the editors of the critical text have provided them. To render the structure of the whole work more perspicuous, I have provided the rest of the section titles.

15. Professor Hubien has published the critical text of Buridan's *Treatise on Consequences:* J. Buridan, *Tractatus de Consequentiis,* ed. H. Hubien (Louvain: Publications universitaires, 1976), translated in P. King, *Jean Buridan's Logic* (Dordrecht: Reidel, 1985).

16. In the Hubien text, Treatise 8 was incomplete.

17. The founding members of the Society were E. P. Bos, H. A. G. Braakhuis, S. Ebbesen, H. Hubien, R. van der Lecq, F. Pironet, L. M. de Rijk, and J. M. M. H. Thijssen.

18. J. Buridan, *Summulae: De Praedicabilibus,* ed. L. M. de Rijk (Nijmegen: Ingenium, 1995); J. Buridan, *Summulae: In Praedicamenta,* ed. E. P. Bos (Nijmegen: Ingenium, 1994); J. Buridan, *Summulae: De Suppositionibus,* ed. R. van der Lecq (Nijmegen: Ingenium, 1998).

The nominalist doctrine of the Summulae

In this introductory essay I can only present a brief overview of some of the principal points of Buridan's doctrine, especially those that demand some preliminary explanation for a fuller understanding of the peculiarities of the subsequent text.

First, some words about the overall structure of the *Summulae* are in order. The first eight treatises contain the systematic exposition of Buridan's logical doctrine in the form of a running commentary on the main text. This format demands a multilevel division of the text: the treatises are divided into chapters, the chapters into parts (usually one-paragraph blocks of text addressing one determinate issue, but in fact, occasionally the parts are subdivided into subparts), and the parts into sections (usually single sentences or clauses of sentences of the part). At the beginning of each chapter, Buridan states the division of the chapter into its parts, referring to the part by its opening words. In the translation this somewhat clumsy system of cross-references is omitted in favor of the multilevel numbering of Buridan's subdivisions. The ninth treatise, the *Sophismata*, is best characterized as a collection of logical exercises, perhaps used to enhance the skills and deepen the understanding of more advanced students. This may explain its rather different structure, centered on the discussion of problem sentences gathered thematically according to the characteristic difficulty they involve, as well as the rather ambiguous relationship between this treatise and the rest of the *Summulae.*

There is a clear, but in its details somewhat loose, correspondence between the first eight treatises of the *Summulae* and the books of the Aristotelian *Organon,* supplemented by Porphyry's *Isagoge.*[19]

19. The name *Organon* (Gr.: tool, instrument, organ) indicates the conception of logic as a universal methodological tool, also reflected in the opening sentence of Peter of Spain's *Tractatus:* "Dialectic is the art of arts, having access to the principles of all methods." The traditional order of the books of the *Organon* is based on the idea of moving from what is simple and formal to what is complex and material, each subsequent book building on the issues covered in the previous ones: *Isagoge* (dealing with the general classification of all predicable terms regardless of what they signify, considering only some formal conditions of their predicability concerning their inferiors), *Categories* (dealing with the classification of simple categorematic terms in terms of what they signify), *On Interpretation* (dealing with propositions consisting primarily of the terms dealt with earlier), *Prior Analytics* (dealing with the formal validity of syllogisms constructed out of the propositions discussed earlier), *Posterior Analytics* (dealing with the soundness of demonstrations based on valid syllogisms), *Topics* (dealing with probable arguments, the probability of which depends on the signification of their terms), and the *Sophistical Refutations* (dealing with the detection of fallacious reason-

The first treatise corresponds to Aristotle's *On Interpretation,* the second to the *Isagoge,* the third to the *Categories,* the fifth to the *Prior Analytics* (but it also contains material related to Boethius's *On Hypothetical Syllogisms*), the sixth to the *Topics,* and the seventh to the *Sophistical Refutations.* The eighth treatise corresponds to the *Posterior Analytics,* but it also contains material from Boethius's logical works, especially his *On Division,* as well as Buridan's own rather original theory of definitions. Finally, the fourth treatise contains Buridan's highly original treatment of topics characteristic of medieval terminist logic, namely, the celebrated properties of terms: signification, supposition, appellation, ampliation, and restriction.[20]

The first treatise covers certain preliminaries, such as the definitions of noun and verb as the primary components of propositions, which, in turn, being the bearers of truth and falsity, are the primary concern of logic, the art that serves as a general tool for reaching truth and avoiding falsity in any field of knowledge.

The prefatory character of these opening remarks also allows Buridan to introduce some of his own characteristic tenets at the outset, laying the foundation for his uncompromising nominalist doctrine. Most important from this point of view is his emphasis on the (semantic) primacy of mental language and the consequent treatment of written and spoken propositions as conventionally assigned token-symbols, which designate the primary bearers of truth and falsity, namely, mental propositions, construed as singular acts of individual human minds.

For Buridan (and, for that matter, medieval philosophers in general), the entities primarily accounting for the possibility of reasoning in any human language are acts of the human mind. But before anyone should jump to conclusions on the basis of this remark and dismiss Buridan's logic as some sort of subjectivist psychologism, relying on "spooky" mental entities, let me hasten to point out that Buridan's commitment to mental language in its semantic function has nothing to do with such modern worries.

For medieval logicians, the commitment to mental language in its semantic function is simply the recognition of the trivial fact that articulate sounds in themselves are not meaningful: a conventionally significative utterance is meaningful only by virtue of its being associated with (or subordinated to) some cognitive act of a human mind. Such a cognitive act, a concept, is simply

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ings). As we shall see, Buridan's treatises do not follow this order, probably for pedagogical reasons.

20. For the early history of this original medieval contribution to logical theory see L. M. de Rijk, *Logica Modernorum: A Contribution to the History of Early Terminist Logic,* 3 vols. (Assen: van Gorcum, 1962–67).

something on account of which a human being conceives of, or is in some way aware of, something.[21] Thus, a meaningful utterance ultimately signifies just that thing or those things which it makes anyone who understands it aware of, that is, anyone who has the corresponding concept and knows that the utterance in question is associated in common usage with that concept.[22] In other words, an utterance is meaningful by virtue of its being subordinated to a human concept, and thus it will immediately signify that human concept, but ultimately it will signify the object or objects of that concept, whatever that concept represents. Therefore, according to Buridan, what a meaningful utterance signifies is neither simply "an extramental thing" nor simply something "in the head." For a meaningful utterance immediately signifies (or is subordinated to) a concept (whatever a concept is in its own nature), but in virtue of this immediate signification it ultimately signifies that thing which is (or those things which are) conceived of, naturally signified, or represented by this concept (whatever it is or whatever they are in their nature), in the way it is (or they are) represented.[23] In fact, Buridan also considers an analogous relation between utterances and inscriptions, as illustrated by figure 1.

Given that human concepts for Buridan are individual acts of individual

21. Note that in this connection it is entirely irrelevant what sorts of entities concepts are in their own nature. Be it a modification of an immaterial mind or just some sort of brain process, a concept is simply something that enables a human being to have a certain type of awareness of something that without this concept he or she would not have. Thus, if I have the concept of money, I can be aware of certain tiny metal discs and some colored pieces of paper as being money, but otherwise I literally "have no idea" that those pieces of metal and paper are money and do not know what one can do with them in a society in which they are recognized as such.

22. Accordingly, if I do have the concept of money, but I do not know that the utterance *'argent'* is subordinated to this concept in French, then I still do not know that on hearing this utterance I should use that concept, that is, that I should think of money. Indeed, it may also happen that I know that this utterance is subordinated in French to the concept of money, but I do not know that it is also subordinated to the concept of silver, which is the case when I do not have full mastery of French.

23. I must note here that Buridan in the text never uses the Latin equivalent of 'represent' *(repraesentat)* to indicate the relation between concepts and things. (I owe thanks to Ria van der Lecq for alerting me to this point.) When he uses the word, he uses it to indicate the relation between spoken and mental terms or the relation between a picture and that which it is a picture of (the former are said to represent the latter). Buridan would rather talk about an object being conceived *(concipitur)*, or naturally signified *(significatur naturaliter)*, by a concept. Nevertheless, in English, it is natural to speak about the representative function of concepts, and hence about the relation between concepts and their objects as being the relation of representation. So I use this English terminology to indicate what Buridan would talk about as the relation of natural signification between concept and thing.

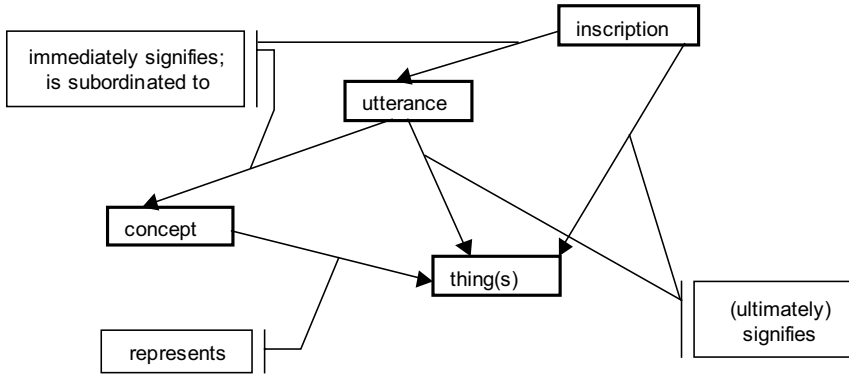

Fig. 1. The Aristotelian "Semantic Triangle"

human minds, however, this conception may immediately give rise to worries about the objectivity of meaning or signification. For if utterances are just labels of our mental acts, could not we switch these labels at will *(ad placitum)*, whenever we want?

Buridan's answer is that this is in fact the case. We really are able to impose any utterance on any concept at will, but, of course, we can understand each other only if we manage to attach the same utterances to the same concepts in the actual use of a common language. So, although any user of a language has the power to impose any utterance on any concept he or she has, the utterance will become generally understood by other users only if the usage "catches on," that is, only if this utterance will be received in common usage as being subordinated to that same concept, namely, to an act of my mind by which I conceive of the same thing or things in the same way as you do by a corresponding act of your mind, and *vice versa*.[24] Furthermore, once such a usage is established, one can again use the same utterance improperly, not in accordance with that usage but as subordinated to another concept, say, analogically, metaphorically, ironically or, perhaps, simply incompetently. Given

24. Such distinct, individual mental acts count as the same concept if and only if they represent the same things in the same way. So they are not, strictly speaking, numerically the same, but they are of the same kind in their representative function. This is why Buridan would speak of similar concepts rather than of the same concept (cf. text at n. 35 in *Sophismata* chap. 2). But speaking of the same concept with the proper understanding will not do any theoretical harm; it is just simpler and more natural. In any case, Buridan would be the first to agree that we can use the phrase 'the same concept' *ad placitum* to indicate distinct mental acts that represent the same things in the same way and that therefore are indistinguishable in their representative function, although they are not strictly one and the same entity.

this dynamic conception of signification based on the interplay between individual understanding and common usage, Buridan may duly be credited with giving concrete meaning to the idea expressed by the contemporary slogan "meaning is use."[25]

Having established the primacy of mental language in his semantics in the above-described manner, Buridan puts it to heavy theoretical use in developing his nominalist conception of the relations between mind, language, and reality.

This is obvious first of all in his treatment of what we would refer to as the issue of *compositionality.* We all know that we are able to understand complex phrases we have never heard before, on the basis of our understanding the meanings of their component parts. Thus, it seems to be an obvious feature of complex phrases that their meaning is determined by the meanings of their components. It is this feature of complex phrases that we refer to as compositionality, which in the technical language of contemporary semantics is usually expressed in the more general form that the semantic value of a complex phrase is a function of the semantic values of its components. But in view of Buridan's two-tiered conception of signification, in his semantics compositionality will not be just the simple issue of determining the semantic values of complex phrases as functions of the semantic values of their components. In fact, if an utterance is imposed as a whole on a complex concept, this conception clearly allows for complexity and so for compositionality on the mental level without a corresponding complexity on the syntactic level of spoken phrases.[26]

These considerations presuppose the distinction between simple and complex concepts. A simple concept is one that does not consist of further concepts, whereas a complex concept is one consisting of several simple concepts.

To be sure, whenever Buridan is talking about complexity on the mental level, we need not take him as attributing the same sort of syntactic complexity to a complex concept as we can observe in spoken or written complex

25. Contemporary philosophers of mind and language who are interested in the interplay between individual understanding and common usage may find Buridan's ideas particularly intriguing. For example, philosophers interested in Fodor's conception of mental language or those dealing with discourse representation semantics may find many interesting overlaps between Buridan's and their own concerns.

26. Besides the obvious examples of using ad hoc abbreviations for the purposes of a discussion, or using simple words for their nominal definition (the significance of which from the point of view of Buridan's nominalism will be discussed below), Buridan goes as far as to claim that a barrel hoop hanging in front of a tavern is made the conventional symbol of the mental proposition "Wine is sold in this house." See 8.2.3. and n. 142 to *Sophismata.* For the converse case see n. 35 below.

expressions. The complexity of a complex concept corresponding to a complex spoken or written expression is nothing but the functional dependence of its semantic values[27] on the semantic values of the simple concepts corresponding to the syntactic parts of the syntactically complex spoken or written expression. But this semantic complexity of a complex concept clearly need not be carried by any sort of syntactic complexity of its constituents, for the simple concepts corresponding to the syntactic parts of the complex spoken or written expression on which the signification of the complex concept depends need not be the syntactic constituents of this merely semantically complex concept. In fact, just as a syntactically simple spoken or written term can be semantically complex, because its semantic values are dependent on the semantic values of other simple terms that are not its syntactic parts, so there is no inconsistency in attributing semantic complexity to ontologically (and hence also syntactically) simple mental acts on the basis of the dependence of their semantic values on the semantic values of other simple concepts, which are not their syntactic parts.

In case anyone has doubts concerning the viability of this distinction between syntactic and semantic complexity, and whether it is indeed inherent in Buridan's conception, let us briefly consider here Buridan's own discussion of what he describes as the simplicity of the name 'Iliad' from the grammarian's point of view (syntactic simplicity) and its complexity from the logician's point of view (semantic complexity).[28]

The name 'Iliad' is syntactically simple, because it has no separately significative parts. (Although of course it does have some parts, namely, its syllables.) Still, if it is made to signify the same things in the same manner as does the whole Trojan story, then of course it becomes semantically complex, because its semantic values will be functionally dependent on the semantic values of all the simple words that make up that story but are not its syntactic parts.[29] Thus, in an analogous manner, we can also have an ontologically

27. I am talking about semantic values in the plural here because Buridan attributes several sorts of semantic values to concepts as well as to written or spoken words and expressions. Indeed, he attributes to them signification and supposition, or even connotation and appellation, and thus to universal categorematic concepts he also attributes several significata or connotata, and hence, depending on the actual context of its use, potentially several supposita or appellata. These technical notions of Buridan's semantics will be explained in due course. In any case, whatever sorts of semantic values are concerned, the complexity of a complex concept consists precisely in the fact that its semantic values are dependent on the relevant semantic values of other concepts.

28. See 1.1.6, 1.2.1, esp. pp. 13–16 below (cf. also p. 839).

29. To be sure, since it does have some parts, the same name could be made syntactically complex, e.g., by imposing its syllables separately to signify the same things that various

and hence also syntactically simple concept (namely, a simple mental act that has no parts and hence no separately significative parts either), which nevertheless may be semantically complex because of its representative function (that is, its semantic value) being dependent on other, semantically and syntactically simple concepts. But then, on the basis of this analogy, Buridan is clearly entitled to speak of these concepts as the (semantic) constituents that make up a (semantically) complex concept, without thereby compromising their ontological and syntactical simplicity.[30]

The simple concepts making up complex concepts are usually combined by means of what Buridan calls *complexive concepts*.[31] Complexive concepts are

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parts of the poem do. In general, the syntactic parts of a syntactically complex expression are any ontologically integral (say, temporal or spatial) parts of the thing that functions as the expression in question such that they have semantic values of their own that enter into the calculation of the semantic value of the complex expression. Accordingly, in the written sentence 'The cat is on the pole', the strings of letters 'cat' and 'pole' function as its syntactic parts, contributing to the meaning of the whole sentence by their own meaning. By contrast, in the word 'polecat', the same strings do not function as syntactic parts, since they do not contribute to the meaning of the whole by their own meaning. On the other hand, if we were to agree that the word 'polecat' should no longer be used in its ordinary sense, in which it normally refers to a particular kind of stinky animal, but as an abbreviation of the sentence 'The cat is on the pole', then the string 'polecat' would still be syntactically simple (although it would be semantically complex, for its meaning would be dependent on the meanings of the parts of that sentence), for it would still not have its own syntactic parts in the above-described sense; but it would become syntactically complex if we were also to agree, say, that its first syllable should henceforth mean the same as 'the cat' and its second syllable the same as 'is on the pole', for then it would have parts with their own meanings determining the meaning of the whole. Compare Buridan's corresponding discussion of *dominus* and *paterfamilias* on p. 16.

30. Compare pp. 428, 849 below. For more discussion of the distinction between syntactic and semantic complexity, and for a formal reconstruction of the idea of conceptual composition and its use in Buridan's semantics in the framework of a model theoretical semantics, see G. Klima, "Latin as a Formal Language: Outlines of a Buridanian Semantics," *Cahiers de l'Institut du Moyen-Âge Grec et Latin* 61 (1991): 78–106. I was recently alerted to the importance of this distinction for the correct understanding of the medieval doctrine of mental language by Yiwei Zheng. See Y. Zheng, "Metaphysical Simplicity and Semantical Complexity of Connotative Terms in Ockham's Mental Language," *Modern Schoolman* 75 (1998): 253–64.

31. Perhaps not all complex concepts need to be the result of combining simple concepts by means of complexive concepts. Simple adjectival concepts, which Buridan discusses somewhat tentatively at length in 8.2.3, may apparently form complex concepts with substantival concepts without the mediation of any complexive concepts. Indeed, perhaps the same goes for concepts corresponding to terms in the genitive case (and probably other

acts of the mind the function of which is not to represent something by themselves but rather to join several concepts into a complex concept. Such complexive concepts (most important, the concept corresponding to the copula)[32] are *syncategorematic* concepts, that is, concepts whose function is not to represent something by themselves but to modify the representative function of *per se* representative concepts, also referred to as *categorematic* concepts.[33]

But then it can happen that even if a spoken phrase is complex, not all of its components have extramental semantic values, but some of them indicate merely complexive concepts. Therefore it is possible that two expressions may signify exactly the same things outside the mind *(ad extra)* despite the fact that they may signify different concepts in the mind *(apud mentem),* the difference being accounted for by the different syncategorematic concepts. For example,

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oblique cases, see 8.2.4.), unless we think of such a concept as a complex concept already consisting of the concept corresponding to the term in the nominative case and to the complexive concept corresponding to the case itself. The corresponding possessive construction in English, e.g., formed with the preposition *of,* would probably be more naturally treated in the second way. These are intriguing questions deserving separate study. In fact, such questions were extensively discussed by late medieval logicians, taking their cue primarily from Ockham and Buridan. Compare Peter of Ailly, *Concepts and Insolubles,* trans. P. V. Spade (Dordrecht: Reidel, 1980), esp. pp. 18–19, 24–26; E. J. Ashworth, "The Structure of Mental Language," *Vivarium* 20 (1982): 59–83.

32. Other examples of complexive concepts are the logical functions of conjunction, disjunction, conditional, and so on. The copula is (some form of) the verb 'to be', or its equivalent, required by the surface syntax of many languages to form sentences out of terms. To be sure, not all languages have such a requirement. For example, neither Hungarian nor Russian has this requirement despite the fact that they are unrelated languages. This need not imply, however, that on the mental level no complexive concept is required to form mental propositions even for users of these languages. In fact, a spoken copula (an equivalent of the English 'is') is not required in Hungarian in the third person in the present tense and in the indicative mood (both in the singular and plural forms), but it is required in the other persons, tenses, and moods. Still, we should note here that Buridan's dynamic conception of mental language allows for the possibility that different users of different languages, or even of the same language, can have more or less different conceptual apparatuses. So "Mentalese" in Buridan's conception need not be construed as a universal, uniform "ideal language" in people's minds, only labeled differently in various spoken languages. This idea has far-reaching consequences for the philosophy of mind and language that cannot be dealt with here. I discuss some of these implications in my "Latin as a Formal Language" and in Essay V of G. Klima, *Ars Artium: Essays in Philosophical Semantics, Medieval and Modern* (Budapest: Institute of Philosophy of the Hungarian Academy, 1988).

33. For Buridan's detailed discussion of the distinction between categorematic and syncategorematic terms and concepts, see 4.2.3. For his discussions of complexive concepts, see, e.g., 1.1.6, 1.2.3, 4.2.4, 4.3.4.

as Buridan argues, the propositions 'God is God' and 'God is not God' signify exactly one and the same thing outside of the mind, namely, God.[34] But of course they do not have the same signification in the mind, for the mental proposition designated by the first involves an affirmative copula, whereas that designated by the second involves a negative copula, whence they are contradictories. Indeed, for the same reason, despite the fact that it is again one and the same simple entity that is signified by the simple term 'God', Buridan is not committed to the absurd claim that the aforementioned propositions signify the same as this simple term, for although they all signify the same *ad extra,* they do not signify the same *apud mentem.*

This simple example nicely illustrates Buridan's general tactic of reducing the ontological commitment of his logic: the syntactic or semantic complexity of a spoken or written expression may reflect (semantic) complexity on the mental level but need not reflect any corresponding complexity on the ontological level.[35] So, by means of his two-tiered semantics, Buridan can consistently maintain both that these propositions are not synonymous, because they are not subordinated to the same concept, and that they do not signify in external reality anything over and above what the term 'God' signifies. The *only* thing that distinguishes these two propositions in their semantic function from this simple term is that they have separately meaningful parts, because these parts are systematically associated with distinct concepts. The term 'God' is subordinated to the concept by which we conceive of God in an absolute manner. The copula 'is' is subordinated to the simple complexive concept that forms the mental proposition affirming the identity of the thing

34. See 1.1.6, 4.2.3, *Sophismata* chap. 1, to the Third sophism. This example and its Buridanian analysis also have an important historical aspect, as is clear from the following quotation from Peter of Ailly: "suppose someone should object to these conclusions that, among the articles condemned at Paris against Master Nicholas of Autrecourt, one is 'To say [that] the sentences "God exists" [and] "God does not exist" signify the same thing, although in different ways, is an error.' I reply that many of his theses were condemned *(multa fuerunt condemnata contra eum)* out of jealousy, and yet later on were publicly conceded in the schools." Peter of Ailly, *Concepts and Insolubles,* p. 58. sec. 203. (According to P. V. Spade's note, the condemnation is dated 1346.)

35. To be sure, syntactic complexity need not necessarily reflect complexity on the mental level, either. For example, the English phrase "man's best friend" is not understood in accordance with its common usage, according to which it means the same as 'dog', if it is understood compositionally, that is, as corresponding to the complex concept made up of the concepts corresponding to the single words of this phrase. So here we have a case where an originally complex expression is transferred as a whole *ad placitum,* by common usage, to designate a simple concept (when, of course, it no longer functions as a complex expression in that usage). Compare 1.1.6.

conceived by the concept subordinated to the subject term and of the thing conceived by the concept subordinated to the predicate term of the spoken proposition (in this case the two terms and the corresponding concepts are the same). Finally, in the case of the negative proposition, the negation 'not' is subordinated to the syncategorematic concept that, applied to the concept of the copula, denies the identity affirmed by the affirmative proposition.

In view of this, for Buridan the logical import of any expression is primarily determined by the sort of conceptual structures conveyed by its syntactical features. Thus, users of a spoken language must rely on such syntactical clues to figure out the conceptual structure determining the logical import of the expressions of the language. Given the systematic connection between these syntactical clues and the corresponding conceptual constructions as established by common usage, the task is not impossible. But in view of all the irregularities and ambiguities of actual spoken languages, in which the commonly (and, for the most part, only tacitly and unreflectively) acknowledged rules of syntax and semantics are not only mechanically applied but also dynamically changed by the interaction of individual users, the task can be rather difficult. Indeed, occasionally, when theoretically unsophisticated common usage does not yield unambiguous rules, Buridan, following common Scholastic practice, is also willing to indulge in "legislation," stipulating just what syntactical constructions are supposed to convey what sort of conceptual constructions (for the sake of precise expression in philosophical or scientific discourse).

The result of this is what is often described as a "regimented," technical Latin, in which, for instance, differences of word order can function as syntactic indicators of different conceptual constructions, which in turn may determine different semantic values for the expressions subordinated to them. In this way, for example, the sentences (1) *Homo non est asinus* ('A man is not a donkey') and (2) *Homo est non asinus* ('A man is a non-donkey') will correspond to different mental propositions that will differ only in their structure, which results from the different ways in which the simple concepts involved in them are construed with one another, as indicated by the different word order of these sentences (i.e., spoken or written propositions). The mental proposition corresponding to (1) can be regarded as being obtained by first applying the complexive concept of the copula to the categorematic concepts of man and donkey, and then applying the syncategorematic concept of negation to the resulting complex concept, whence the negation of the copula in the surface syntax must yield the negation of the whole proposition. On the other hand, the mental proposition corresponding to (2) can be obtained by first applying the concept of negation to the concept of donkey (which is a

case of what Buridan, following Aristotle, calls *infinitizing negation*) and then applying the concept of the copula to the concept of man and to the complex of the negation and the concept of donkey.[36]

According to Buridan, the difference in the logical import of these two constructions, which otherwise contain exactly the same constituents, is that (1) is a negative proposition that can be true even if no human beings exist, but (2) is affirmative and hence can be true only if there are human beings (who are non-donkeys). Thus, in this case, the difference in word order indicates a difference in conceptual structure, which in turn yields the further difference in what is required for the truth or falsity of the resulting mental propositions.

Even though in this way truth and falsity are primarily the attributes of the mental propositions designated by the corresponding spoken or written propositions (sentences), the latter can also be said to be true, insofar as they are the (complex) signs of the former. In fact, the corresponding sentences of another language can also be said to be true for the same reason. Thus (1′) 'A man is not a donkey' and (2′) 'A man is a non-donkey' are equivalent to (1) and (2), respectively, because they designate mental propositions that are similar in structure to the ones designated by the corresponding Latin sentences.

Buridan's reason for treating these sentences in this way is simple: for him the complexive concept to which the affirmative copula is subordinated signifies the identity of the thing or things referred to by the terms flanking the copula.[37] Now, clearly, if there is nothing for these terms to refer to, then they cannot refer to the same thing or things, and so the affirmative proposition stating this identity must be false. But in that case the contradictory negative proposition must be true. We have just seen, however, that on the basis of how the mental proposition corresponding to (1) is constructed, the negation of the copula in it produces precisely the contradictory of the corresponding

36. The somewhat vague notion of "applying" a concept to another introduced here can acquire precise meaning in a model-theoretical reconstruction of Buridan's semantics in which concepts in their semantic function are represented by semantic functions defined in a model, and then applying one concept to another will be a case of applying a function to another as to its argument, as usual in mathematics. For details see my "Latin as a Formal Language." Basically, if we designate the concept of an utterance U as CON(U), then the difference of (1) and (2) can be brought out as follows:

CON(Homo non est asinus) = CON(non)(CON(est)(CON(homo))(CON(asinus)))

CON(Homo est non asinus) = CON(est)(CON(homo))(CON(non)(CON(asinus)))

37. Indeed, he takes this understanding of the function of the copula as a "first indemonstrable principle," despite his obvious awareness of the alternative analysis provided by the *via antiqua* "inherence theory of predication." See *Sophismata,* chap. 2, Tenth conclusion. More details of this issue will be discussed below.

affirmative mental proposition. This is what Buridan means by claiming that the contradictory of a categorical proposition is formed by denying its formal part, namely, the copula.[38]

Given this understanding of the copula and its negation, the "laws of opposition" summarized in the *Square of Opposition* automatically follow.[39] For in this way a universal affirmative proposition states that whatever its subject stands for is identical with something its predicate stands for. For example, 'Every man is an animal' in this analysis affirms that whatever the subject term stands for (i.e., any individual human being) is identical with something that the predicate term stands for, that is, an animal. But then, if there are no human beings, there is nothing for the subject to stand for, and thus nothing that the subject stands for can be identical with an animal, in which case this proposition is false. But if it is false, then its contradictory is true. Now, the contradictory of a proposition is obtained by denying the proposition as a whole, by placing a negation in front of the whole proposition. In this case, we obtain 'Not every man is an animal'. But 'Not every' is equivalent to 'Some . . . not', where the negation is the negation of the embedded affirmation following it, which, in accordance with the foregoing considerations, must be expressed by negating its copula, whence we obtain 'Some man is not an animal'. If this is really the contradictory of 'Every man is an animal', however, which is false when there are no people, then this yields the counterintuitive result that 'Some man is not an animal' is true under the same circumstances.

The main reason why this may sound counterintuitive is our tendency to interpret a proposition such as 'Some man is not an animal' not as being strictly equivalent to 'Not every man is an animal', i.e., 'It is not the case that every man is an animal', but rather as being equivalent to 'Some man is a non-animal', which clearly does entail the existence of human beings. Therefore, once the relevant distinction is made, Buridan can claim that it is only sloppy usage that obscures this clear-cut conceptual distinction, and so this distinction obviously demands a little "regimentation" of usage, at least in strict scientific and philosophical contexts, where much hinges precisely on such otherwise easily overlooked distinctions.[40]

This may not be the only reason for our reluctance to accept this conclusion, however. For one may find attributing existential import to the universal affirmative proposition counterintuitive in the first place. After all, is not 'Every man is an animal' a necessary truth, which must hold regardless of whether

38. See 1.3.4, 1.3.6, 1.4.3.

39. See 1.4.2.

40. For more detailed discussions of this issue see Essays II and III of Klima, *Ars Artium.*

there is actually anything to which it applies? Are not all necessary, law-like statements precisely of this sort, namely, that their truth cannot depend on some actual, contingent state of affairs?

In response to these questions, first of all we must make a distinction between an assertoric proposition *(de inesse)* that is necessary, namely, one that cannot be false, and a modal proposition about necessity *(de necessario),* which makes the claim that the predicate necessarily belongs to the subject, and which is false if the predicate does not necessarily belong to the subject. According to Buridan, the proposition 'Every man is necessarily an animal' is true, for the predicate does indeed necessarily belong to the subject, and this is so even when there are no human beings. In fact, for the truth of this proposition it is not required that the subject refer to any actual human being. In accordance with Buridan's version of the medieval theory of ampliation,[41] the modal context *ampliates,* i.e., extends, the range of reference of the subject term, so that this proposition is equivalent to 'Everything that is or can be a man is necessarily an animal', which of course is true even if there are no human beings. (By contrast, the proposition 'Every round square is necessarily round' is false, for on this analysis it is equivalent to 'Everything that is or can be a round square is necessarily round', and thus it is an affirmative proposition the subject of which refers to nothing, since nothing can be a round square.)[42]

Nevertheless, despite the fact that the proposition about necessity *(de necessario)* 'Every man is necessarily an animal' is true even if there are actually no human beings, the assertoric 'Every man is an animal', analyzed as a simple proposition about actuality *(de inesse),* is false in that situation.[43] As Buridan points out, however, this is not the only possible analysis of this proposition. Precisely because the corresponding modal proposition is true, this assertoric proposition can also be analyzed as what we would call a law-like statement, in which the range of reference of the subject is not restricted to the actual present time connoted by the copula, but covers everything that did, does, or

41. See 4.6. See also the entry 'ampliation' in the index. For discussion, references, and a reconstruction of the theory of ampliation, see G. Klima, "Old Directions in Free Logic: Existence and Reference in Medieval Logic," in *New Directions in Free Logic,* ed. K. Lambert (forthcoming), and *Klima,* "Existence, Quantification, and the Medieval Theory of Ampliation," in Klima, *Ars Artium.*

42. Compare the index entries 'chimera' and 'vacuum'. For the vexed history of chimeras in their logical role see S. Ebbesen, "The Chimaera's Diary," in *The Logic of Being: Historical Studies,* ed. S. Knuuttila and J. Hintikka (Dordrecht: Reidel, 1986), pp. 115–43.

43. For the terminological problems involved here see the first note to 1.3.4 (n. 62).

will fall under the subject, because the subject term in this proposition has the type of reference that Buridan calls *natural supposition*.[44] As he writes in 4.3.4:

> Again, just as the intellect is able to conceive of man and animal without any distinction of time by means of the concepts whence the terms 'man' and 'animal' are imposed, so it is likely that it is able to form a complexive concept without any distinction of time. But then the mental proposition [formed with this concept] will be indifferent with respect to all present, past and future times, and so also [its] terms will supposit for everything from those times indifferently. But we do not have an utterance properly imposed to signify such a mental copula, so we can use the verb 'is' by convention [*ad placitum*] to signify such a copula by which the present time will no more be signified than is the past or the future; indeed, [it will signify] no time at all, and so there will occur a natural supposition of the terms. In fact, perhaps we can show from our faith that we are able to form such mental propositions. For God could preserve all things in rest, without motion (I mean all things other than motion). So let us suppose that He does so. Then nothing would be time, if every time is motion, as Aristotle shows in bk. 4 of the Physics.[45] Nevertheless, the souls of the blessed would know and understand by mental propositions that God is good and that they are present to Him; and by the copulas of those mental propositions they would not co-understand [*cointelligerent*] time, for they would also know that there is no time, and so they would know that neither they themselves nor God did exist in the present time, and that they did not coexist with the present time either. And it appears to me that a spoken copula imposed precisely to signify such a complexive concept would be purely syncategorematic, while others, which connote a certain time, already share [the characteristics of] categorematic [terms], in that beyond their concept they also signify an external thing conceived besides the things signified by the subject and the predicate, namely, time.

In this way, then, Buridan is able to account for both the validity of the relationships of the *Square of Opposition* and the intuition that the truth of 'Every man is an animal' should not depend on the contingent fact of whether there actually are any human beings. Nevertheless, he would still hold that

44. For more on the development of the idea of natural supposition, see L. M. de Rijk, "The Development of Suppositio Naturalis in Mediaeval Logic: Fourteenth-Century Natural Supposition as Atemporal (Omnitemporal) Supposition." Parts 1 and 2. *Vivarium* 9 (1971): 71–107; 11 (1973): 43–79.

45. Aristotle, *Physics* IV.2.219a2–b4.

the proper interpretation of the assertoric proposition does involve the connotation of the copula, which is properly modified only in a modal proposition, and thus the modal proposition, even when it is about necessity, need not entail the assertoric proposition.

But the case is somewhat different with what Buridan would call a composite modal, that is, one in which the mode ('necessary', 'possible', 'impossible', and so on) does not modify the copula, but in which the mode is predicated of (or is subjected to) a nominalized form of a proposition by means of an assertoric copula.[46] For example, the proposition 'That a man is an animal is necessary' is such a composite modal, in which the predicate term is the mode, and the subject term is the that-clause attached to it by the assertoric, unmodified copula 'is'.

Buridan's reason for calling such composite modals not properly modal propositions is precisely that their main copula is not modified by the mode but remains assertoric. Here the mode has only the function of asserting the modal status of the proposition referred to by the corresponding complex nominal phrase, but not of modifying the copula.

The nominal phrase in question in Buridan's Latin is an accusative with infinitive construction. For example, in *Hominem esse album est possibile/necessarium/verum,* etc. ('That a man is white is possible/necessary/true, etc.') the subject term is the accusative with infinitive phrase *hominem esse album,* which is a nominalization of the sentence *Homo est albus,* formed from the accusative form of the subject and the predicate and from the infinitive of the verb. In English we have analogous constructions, for example, 'I believe him to be insane', but the same construction is not available with the modalities listed here. On the other hand, since such constructions are almost always convertible into a construction with a that-clause, as in 'I believe that he is insane', which also works with the modalities, I use that-clauses in the translation to render Buridan's accusative-with-infinitives and adjust explicit references to the construction itself in the text accordingly. When this practice causes major discrepancies, I add an explanatory note or a brief reference to the present discussion.

In any case, whichever nominal form we use, the semantic function assigned to it by Buridan is clear: as a common term, it primarily has the function of referring materially to individual tokens of the corresponding proposition. Therefore, such a nominalization is also quantifiable; that is, Buridan admits constructions such as 'Every *that a man is wise* is true', which is true if and only if every proposition-token of the form 'A man is wise' is true. Hence, if there are no such proposition-tokens in existence at the present time,

46. See 1.8.9, 5.6.2.

say, because all written sentences of this form are eliminated, nobody utters this sentence, and nobody forms the corresponding mental proposition, then 'Every *that a man is wise* is true' is false according to Buridan, even if there exists a wise person at this time.[47]

Such sentential nominalizations, however, do not merely perform the function of referring to corresponding proposition-tokens. For clearly, in the construction *hominem secare est hominem agere* ('For a man to cut is for a man to act' or 'That a man cuts is that a man acts'), the subject and the predicate cannot refer to the corresponding propositions: this sentence does not state that the proposition 'A man cuts' is the proposition 'A man acts'.[48] Still, consistent with his uncompromising nominalism, Buridan would not allow even in this case that these constructions stand for *complexe significabilia,* the alleged total *significata* of the corresponding propositions (endorsed, for example, by Gregory of Rimini),[49] which Buridan regarded as unacceptable additions to one's ontology. Instead, he argues that when these sentential nominalizations do not stand *materially* for the corresponding sentence-tokens but are taken *significatively,* then they stand for the individuals of which their categorematic terms are jointly true, if they are true of anything; otherwise they stand for nothing.[50]

All these considerations, as well as the more traditional topics Buridan covers in the treatises on the Porphyrian predicables and the Aristotelian categories (in treatises 2 and 3), make use of technical semantic notions that Buridan will treat systematically only in treatise 4, *On Suppositions.*

First among these is signification, which I touched on earlier. Here I must add only one further distinction, which, as we shall see, is crucial from the point of view of Buridan's nominalism. The distinction concerns the types of

47. See 1.8.9.3.

48. See *Sophismata,* chap. 2, Third conclusion.

49. See N. Kretzmann, "Medieval Logicians on the Meaning of the Propositio," *Journal of Philosophy* 67 (1970): 767–87; G. Nuchelmans, *Late-Scholastic and Humanist Theories of the Proposition* (Amsterdam: North Holland, 1980); E. J. Ashworth, *Language and Logic in the Post-Medieval Period* (Dordrecht: Reidel, 1974), pp. 55–62. In a recent paper, Jack Zupko convincingly argues that, although the late medieval notion of *complexe significabile* (closely related to the earlier notions of *enuntiabile* and *dictum*) was introduced by Adam Wodeham, Buridan's arguments are directed against Gregory of Rimini's version of the theory. See J. Zupko, "How It Played in the Rue du Fouarre: The Reception of Adam Wodeham's Theory of Complexe Significabile in the Arts Faculty at Paris in the Mid-Fourteenth Century," *Franciscan Studies* 54 (1994–97): 211–25. A good selection of relevant texts along with a German translation and comments is provided by D. Perler, *Satztheorien: Texte zur Sprachphilosophie und Wissenschaftstheorie im 14. Jahrhundert* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1990).

50. See *Sophismata,* chap. 2, conclusions 3–8.

signification that common categorematic terms may have. On this basis, common categorematic terms can be classified as either absolute (nonconnotative) or appellative (connotative). One should note here that Buridan does not provide an explicit definition of any of the basic properties of terms that he covers in this treatise. Instead, his aim seems to be to teach them in practice, by pointing out their differences through examples. Nevertheless, on the basis of these examples we may attempt to provide some definitions for our own use.

Thus, we may say that the signification of a common categorematic term is its relation to its ultimate significata, namely, the things naturally represented by the universal concept to which the term is subordinated. Now some of these concepts are connotative, i.e., they represent the things they directly represent *in relation to* some things (which hence they represent only obliquely, as somehow related to the things they directly represent), whereas others are absolute, i.e., they represent the things they directly represent *not in relation to* anything. Accordingly, an appellative term is one that, in virtue of its being subordinated to such a concept, signifies its significata in relation to some things, and then those things are called its connotata, or appellata.[51] An absolute term, on the other hand, is one that signifies its significata absolutely, not in relation to anything. For example, the term 'father' or the term 'husband' signifies men in relation to their children or to their wives, for any father is somebody's father and any husband is somebody's husband, whereas the term 'man' in the sense of 'human being' signifies all human persons not in relation to any thing, but only as the members of the species of rational animals. By contrast, the term 'man' in the sense of 'male human person' would signify men not absolutely but in respect of their accidental difference of gender, distinguishing them from women.

Signification, therefore, is a property of these terms by virtue of which they are meaningful at all and on account of which they are related to the things that their concepts represent, in the manner in which the things are represented by these concepts.

Supposition, on the other hand, is the referring function of terms in propositions, i.e., their relation to the things that they are actually taken to stand for in the context of a given proposition, in the manner determined by that context. For Buridan, a term has *material supposition* when it is taken to stand in a proposition for any of the token-terms similar to it, including itself, or for a concept immediately signified by such a token-term in an individual

51. Strictly speaking, a connotative term's connotata should be called its appellata only as they are obliquely referred to in the context of a proposition, just as its significata are its (personal) supposita only in a propositional context. But even Buridan is willing to talk more loosely about the supposita and appellata of such terms outside of such a context.

human mind. A term is said to have *personal supposition* when it stands for its ultimate significata, i.e., the things represented by the concept it immediately signifies.[52]

If the term in question is appellative, then in a proposition in which it has personal supposition it supposits for its supposita in relation to its appellata. For example, the term 'father' in the proposition 'Every father is a man' supposits for men in relation to their children, and thus not for all men but only for those who have children.

In general, for Buridan, the appellation of a term is the relation of the term in a proposition to its appellata, i.e., the things in relation to which it supposits for its supposita.[53] So, in the proposition 'Every father is a man' the supposita of the term 'father' are the ultimate significata of the same term which it signifies in relation to their children, who, in the context of the proposition are the term's appellata, as illustrated by figure 2.

On the basis of this understanding of appellation, Buridan is able to claim that it is not only appellative terms that can have appellation in a proposition. Absolute terms can also have appellation, when they are not the subject or the predicate of a proposition themselves but parts of complex subjects or predicates. In that case they either appellate the ultimate significata of their nominative forms (i.e., the entities that would be the personal supposita of their nominative form if they were the subject or predicate of a proposition) or the immediate significata of their nominative forms (i.e., the concepts to which their nominative forms are subordinated).[54]

For example, in the sentence *Hominis asinus est animal* ('A man's donkey is an animal'), the subject term is the possessive construction *hominis asinus,* in which the genitive form *hominis* ('man's') of the absolute term *homo* (man) does not supposit, for only the complex term as a whole supposits, but it appellates men as possessors of donkeys, and so, owing precisely to this appellation, the whole term will supposit in this proposition only for donkeys actually possessed by men. Indeed, it is on the basis of this type of analysis of

52. See 4.3.2.

53. We should note here that Buridan's understanding of appellation is radically new, rather different from that of his predecessors. See A. Maierù, *Terminologia logica della tarda scolastica* (Rome: Edizioni dell'Ateneo, 1972), chap. 1. Still, in later Scholasticism, probably owing largely to the success of his theory of *appellatio rationis,* his interpretation became very influential and was adopted not only by nominalists but by realists as well. See Ashworth, *Language and Logic in the Post-Medieval Period,* pp. 92–97.

54. From this point of view, the extension of the theory of appellation to cover the appellation of concepts seems to complement rather appropriately Buridan's conception of material supposition, which also includes supposition for the immediate significates of terms in appropriate propositional contexts. See 4.3.8.4.

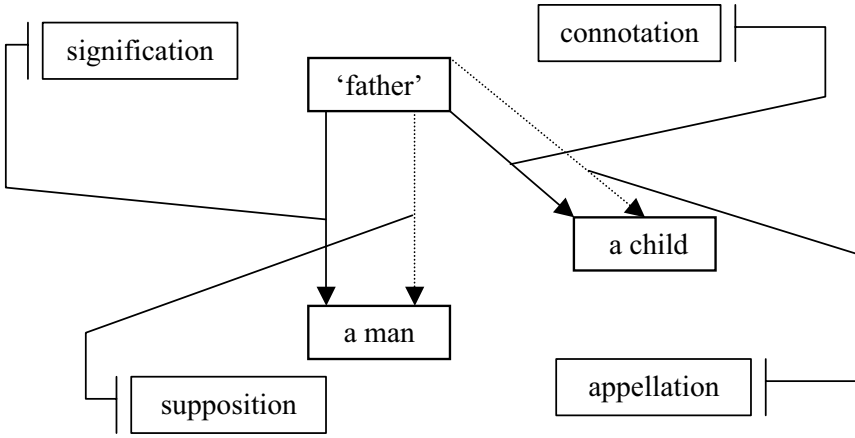

Fig. 2. Buridan's Conception of the Semantic Relations of a Relative Term

the structure of complex terms that Buridan can successfully handle propositions with *oblique terms* (terms in cases other than the nominative case, which they receive in Latin when they enter into the constitution of a complex term), which modern logicians would regard as involving multiple quantification, such as *Cuiuslibet hominis asinus currit* ('Of every man a donkey runs').[55]

But the philosophically more intriguing case of appellation is that of the appellation of concepts, *appellatio rationis,* which is at once Buridan's most influential theory for treating the problems of reference in intentional contexts and his most efficient instrument of nominalist logical analysis, where at first sight a realist solution would seem to be more plausible.

55. See 1.3.3, 4.2.6, 5.8.2–4. These passages are especially important to dispel, or at least to refine, the widespread belief among contemporary philosophers that the logical analysis of inferences involving propositions of this type is theoretically beyond the reach of traditional (i.e., pre-Fregean) logic. There have been several interesting attempts in contemporary logic to construct "term-logics," despite the general prevalence of the Fregean paradigm. Most notable among these are the systems of S. Lesniewski, especially as developed by C. Lejewski and applied to medieval theories by D. P. Henry, and those of F. Sommers, further developed by G. Englebretsen and others. For discussion, references, and my own attempts to construct such systems as simple extensions of standard quantification theory, see Klima, *Ars Artium.* See also 5.8.2 n. 57. For more on the medieval treatment of cases of "multiple quantification" see, e.g., A. D'Ors, "Hominis asinus/Asinus hominis"; in *Sophisms in Medieval Logic and Grammar,* ed. S. L. Read (Dordrecht: Kluwer, 1993), pp. 382–97; E. Karger, "A Theory of Immediate Inferences Contained in Buridan's Logic," in *Argumentationstheorie: Scholastische Forschungen zu den logischen und semantischen Regeln korrekten Folgerns,* ed. K. Jacobi (Leiden: Brill, 1993), pp. 407–29; P. Thom, "Termini Obliqui and the Logic of Relations," *Archiv für Geschichte der Philosophie* 59 (1977): 143–55.

Consider the proposition 'I promise you a horse'.[56] In accordance with Buridan's general account of categorical propositions, this proposition must be analyzed as 'I am someone promising you a horse', which is true if its terms supposit for the same thing, that is, if its predicate supposits for me. Now apparently, this predicate can supposit for me only if I am someone promising you a horse, that is, if the term 'someone promising you a horse' supposits for me in relation to you and in relation to a horse. But which horse? If I promise you a horse in general without having any particular horse in mind, which I can certainly do, then this term cannot supposit for me in relation to Brownie, for I do not promise you Brownie, and the same goes for any particular horse.

Does this mean that if I promise you a horse in general, then, since I do not promise you any horse in particular, I promise you a universal horse? In fact, according to the realist analysis of this sentence provided by Walter Burleigh, in this case I promise you a universal horse, which, however, I can deliver only in a particular horse, indeed, in any particular horse.[57]

But this solution runs counter to the intuition that the object of my promise must be precisely what I eventually deliver (and not only somehow connected with what I deliver), but what I deliver must be a particular horse, for you would certainly not be satisfied unless you can ride away on the back of the object of my promise, which you can do only with a visible, tangible, particular horse, existing under its determinate dimensions in space (which we could not say of a universal horse, whatever that is). But then, if any horse that could count as fulfilling my promise must be a particular horse, and yet, I did not promise you any particular horse, should this mean that I promised you no horse at all?

Buridan's ingenious solution to this problem is provided in terms of his theory of appellation of concepts. The term 'horse' in 'I promise you a horse' does not stand for a universal horse, nor just for a particular horse, but for any singular horse along with the appellation of the universal concept of horses, since a promise concerning any horse in general is precisely one that is made by conceiving of any particular horse in general, by means of the universal concept of horses. Summarizing his analysis of appellation of concepts, Buridan writes:

56. I provide a thorough discussion of Buridan's treatment of the problem in G. Klima, "*Debeo tibi equum:* A Reconstruction of the Theoretical Framework of Buridan's Treatment of the Sophisma," in Read, *Sophisms in Medieval Logic and Grammar,* pp. 333–47. The paper also provides a number of further references to alternative treatments of the issues involved.

57. Walter Burleigh, *De Puritate Artis Logicae Tractatus Longior,* with a revised edition of the *Tractatus Brevior,* ed. P. Boehner (St. Bonaventure, N.Y.: Franciscan Institute, 1955), chap.3. pp. 11–15, esp. p. 14. See n. 65 below.

> These are the things to be said about the special conditions of these verbs and the special mode of confusion of the accusatives which follow them [i.e., their grammatical objects]. They seem to arise entirely from the fact that these accusatives somehow appear to participate in material supposition. For they appellate their concepts, although they do not supposit for them, and so it is not possible to descend to the supposita of other concepts. They appellate these concepts in this way because we think of things by means of those concepts, but it is not in this way, i.e., not by means of a concept, that fire heats water, or that a stone hits the ground.[58]

But since for Buridan universal concepts are just universally representing singular acts of individual human minds, this solution does not compromise his nominalist ontology, whereas it provides both a logically satisfactory solution to the puzzles of reference in intentional contexts and a philosophically intriguing explanation for their emergence in the first place.

Indeed, in general, the greatest appeal of Buridan's logic is precisely this comprehensive consistency, whereby it provides a coherent explanation from a unifying standpoint even in cases where it seems the least likely to succeed in keeping to the principles of his nominalist metaphysics. To be sure, this need not mean that Buridan is absolutely right, or that by this comprehensive consistency his nominalist metaphysics is entirely justified. In the next section, I shall conclude this discussion with a brief evaluation of Buridan's doctrine in its historical context as well as *sub specie aeternitatis.*

The historical and philosophical import of Buridan's doctrine

The best way to understand the philosophical import of Buridan's nominalism is to consider it in comparison with its historical alternative, medieval realism.[59] According to their opponents, most notably Ockham and Buridan,

58. See 4.3.8.4.

59. To be sure, despite the quite widespread contemporary understanding of the term 'realist' when applied to medieval philosophers, and the fact that many late medieval thinkers described themselves and their contemporaries as being either realists *(reales)* or nominalists *(nominales),* when we are talking about medieval realism, we should not have in mind the Platonic theory according to which there are universal entities, such as a universal horse, the universal Equinity, which exists in separation from every other being in itself, is numerically one, and is an exemplar of all its singulars because it excellently, yet univocally, exemplifies only what is essential to them all, whereas the latter are its singulars precisely because they participate in these essential characteristics. Such "extreme realism" concern-

the realists are guilty of adhering to a fundamental error in their understanding of the relations between mind, language, and reality. As Ockham most famously put it, the realists' fundamental error is "multiplying beings according to the multiplicity of terms . . . which, however, is erroneous and leads far away from the truth."[60] Or, as Buridan declares:

> "We should note that concerning action and passion and the four other remaining categories, I do not intend to follow the doctrine of the author of *The Book of Six Principles*.[61] For I think that he was mistaken, since he believed that no terms that pertain to diverse categories can supposit for the same thing, and so he maintained that action is one form and passion is another, and that passion would hence be an effect of action; this is totally false, and thus his doctrine made many people err."[62]

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ing universals was regarded even by otherwise "realist" medievals as entirely absurd and sufficiently refuted by Aristotle, so that some even doubted that Plato ever held the theory in this crude form. Compare Soto, *In Porphyrii Isagogen, Aristotelis Categorias, librosque de Demonstratione, Commentaria* (Venice, 1587; reprint, Frankfurt am Main: Minerva, 1967), q. 1, p. 30, 1I; Aegidius Romanus, *In Primum Librum Sententiarum* (Venice, 1521; reprint, Frankfurt am Main: Minerva, 1968), 1SN, d. 19, pt. 2, q. 1, and John Wyclif, *Tractatus de Universalibus,* ed. I. J. Mueller (Oxford: Clarendon, 1985), pp. 61–69. The more refined, "moderate" realist account will be expounded in the subsequent discussion. For more details and a comparative discussion of Aquinas and Ockham on these and related issues see G. Klima, "The Changing Role of *Entia Rationis* in Medieval Philosophy: A Comparative Study with a Reconstruction," *Synthese* 96 (1993): 25–59.

60. William of Ockham, *Summa Logicae,* ed. P. Boehner, G. Gál, and S. Brown (St. Bonaventure, N.Y.: Franciscan Institute, 1974), pt. 1, chap. 51, p. 171. For a detailed discussion of Ockham's relevant arguments see M. M. Adams, *William Ockham,* 2d ed. 2 vols. (Notre Dame, Ind.: University of Notre Dame Press, 1989), pp.169–285. In fact, this charge later became the defining characteristic of the realists, at least for the Parisian nominalist doctors who in their manifesto of 1474 wrote the following: "those doctors are called nominalists, who do not multiply the things principally signified by terms according to the multiplicity of the terms; whereas the realists are those who, on the contrary, contend that things are multiplied according to the multiplicity of the terms." F. Ehrle, "Der Sentenzenkommentar Peters von Candia, des Pisaner Papstes Alexanders V.," in *Franziskanische Studien* 9 (1925): 322. Compare N. W. Gilbert, "Ockham, Wyclif and the 'via moderna,'" in *Antiqui und Moderni: Traditionsbewusstsein und Fortschtrittsbewusstsein im späten Mittelalter,* ed. A. Zimmermann (Berlin: de Gruyter, 1974), pp. 85–125.

61. *Liber de Sex Principiis,* in *Isagoge, translatio Boethii,* ed. L. Minio-Paluello under the title *Anonymi Fragmentum vulgo vocatum "Liber de Sex Principiis"* (Bruges: Desclée, De Brouwer, 1966), p. 41, l. 8.

62. See 3.6.1. Compare Buridan's *Quaestiones in Praedicamenta,* ed. J. Schneider (Munich: Verlag der Bayerische Akademie der Wissenschaft, 1983), pp. 129, 149, 145, where at one

These typical nominalist charges, however, are not quite justified. To be sure, if we compare Buridan's semantic principles with the corresponding principles of what may be described as a realist or *via antiqua* semantics,[63] then one may easily get the impression that the latter is heavily burdened by ontological commitment to a host of strange entities, rightfully rejected by the nominalists. Indeed, this impression seems to be justified already by a quick look at the differences between the nominalist and the realist conceptions of the signification of common terms and their corresponding alternative theories of predication.

According to the realist theory, the function of a common categorematic term is not to signify the particulars for which it supposits in personal supposition but to signify the common nature on account of which the things having this nature fall under this term; this is why the term can be used to refer to these things in a proposition. For example, according to realists, the function of the term 'man' is *not* to signify individual human beings, but this term signifies human nature in abstraction from its individuating conditions, which is why it can be used to refer to any individual human person when the term has personal supposition in the context of a proposition.[64]

Despite possible appearances to the contrary, this much in itself does not involve commitment to abstract Platonic universals in reality. For the com-

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point he exclaims that the teachings of the *Liber Sex Principiorum* are strong enough to kill dogs!

63. I am using this phrase only to refer to the characteristic semantic theory of medieval realists. For a detailed historical discussion of the late medieval contrast between *via antiqua* and *via moderna* see Moore, "Via Moderna." For a side-by-side comparison of these principles see G. Klima, "Buridan's Logic and the Ontology of Modes" in *Medieval Analyses in Language and Cognition,* ed. S. Ebbesen and R. L. Friedman (Copenhagen: Royal Danish Academy of Sciences and Letters, 1998), pp. 458–79.

64. For an explicit clash between a nominalist and a realist over this issue, see Burleigh, *De Puritate Artis Logicae Tractatus Longior,* pp. 6–10; William of Ockham, *Summa Logicae,* pp. 124, 195–96. For further details of the realist conception, see, e.g., Lambert of Auxerre, *Logica (Summa Lamberti),* ed. F. Alessio (Florence: La nuova Italia editrice, 1971), pp. 205–9 (but note that according to Gauthier and De Libera, among others, the *Summa Lamberti* is to be attributed to Lambert of Lagny, not Lambert of Auxerre); Burleigh, *De Puritate,* chap. 3, p. 7; Domingo Soto, *Summulae, Summularum aeditio secunda* (Salamanca, 1554; reprint, Hildesheim: Georg Olms Verlag, 1980), bk. 1, chap. 7; bk. 2, chap. 10; bk. 2, chap. 14; Pseudo-Campsall, "*Logica Campsale Anglicj, valde utilis et realis contra Ocham,*" in *The Works of Richard Campsall,* ed. E. A. Synan, vol. 2 (Toronto: Pontifical Institute of Mediaeval Studies, 1982), chap. 9, n. 4, p. 101. For a detailed description and analysis of the principles involved in the typically "realist semantics" of Saint Thomas Aquinas, see G. Klima: "The Semantic Principles Underlying Saint Thomas Aquinas's Metaphysics of Being," *Medieval Philosophy and Theology* 5 (1996): 87–141.

mon human nature signified by the term 'man' according to this conception need not be construed as a really existing universal entity, which is numerically one in itself but is somehow common to all the individuals that have it.[65] On the contrary, in reality there are only individual human beings with their individual human natures (i.e., the human nature of Socrates, which renders *him* a human being, is not the same thing as the human nature of Plato, which renders *him* a human being), but their human natures are conceived by our intellects in abstraction from their individuating conditions (i.e., the human nature of Socrates and that of Plato are not conceived as the human nature of Socrates and that of Plato, but simply as human nature, disregarding to whom they belong). This is why they can be signified universally by the term subordinated to the concept by which we conceive of human beings in this manner. Thus, human nature does not *exist* in abstraction from singulars, it is only *conceived* in this way (i.e., disregarding its individuating conditions, which it has in singulars, without which it could not exist at all), and hence it is also *signified* in this way by the term 'man'. This does not mean that the term must *refer to* (supposit for) human nature conceived in this way in the context of a proposition in which the term has personal supposition. On the contrary, as I have said, in personal supposition the term will refer to individuals that have such a nature (namely, each its own). So what is ultimately signified by this term is the individualized human natures of individual humans, and this is precisely why the term can personally supposit for individual human beings, i.e., the things that actually have this nature. Indeed, it is this conception of signification that accounts not only for this interpretation of personal supposition but also for the characteristic theory of predication that goes hand in hand with this conception of signification, which historians of medieval logic have dubbed the *inherence theory,* as opposed to the nominalists' *identity theory.*[66]

65. Compare n. 59 above. In fact, the "realist" solution to the problem generated by intentional verbs referred to above is presented by Burleigh in the following way: "when the question is raised according to what sort of supposition this proposition is true: 'A horse is promised to you', positing that someone promises you a horse, and *maintaining that there is some unity other than numerical unity,* one should reply that [it is true] insofar as the subject has absolute simple supposition, for I do not promise you this horse nor that horse, but simply a horse. And since a universal cannot exist by itself, and consequently cannot be given, except in some singular, the one who promises you a horse is obliged to give you some singular, for otherwise he could not give you what has been promised" (my italics). Burleigh, *De Puritate,* chap. 3, p. 14.

66. Compare, e.g., L. M. de Rijk's introduction to Petrus Abaelardus, *Dialectica,* ed. L. M. de Rijk (Assen: Van Gorcum, 1970), pp. 1:37–38; D. P. Henry, *Medieval Logic and Metaphysi*cs (London: Routledge and Kegan Paul, 1972), pp. 55–56; P. T. Geach, "Nominalism," in *Logic Matters* (Berkeley: University of California Press, 1980), pp. 298–301.

As we have seen, for Buridan an affirmative categorical proposition is true if and only if its terms supposit for the same thing or things.[67] By contrast, according to the inherence theory such a proposition is true if and only if the universal nature signified by its predicate actually *inheres* in the supposita of its subject, that is, if the supposita of its subject are actual in respect of the universal nature signified in them by the predicate. For example, the proposition 'Socrates is a man' is true according to the identity theory if and only if Socrates is identical with one of the personal supposita of the term 'man', whereas according to the inherence theory the same proposition is true if and only if Socrates is actual in respect of the nature signified by the predicate, i.e., if Socrates' human nature is actual. Again, the proposition 'Socrates is a father' is true according to the identity theory if and only if Socrates is one of the supposita of the term 'father', i.e., if he is one of the men signified by this term in relation to a child (who, in turn, is one of the appellata of this term), whereas according to the inherence theory the same proposition is true if and only if the nature signified by the predicate term in Socrates, namely Socrates' fatherhood in respect of a child, is actual. This can clearly be seen if we consider figure 3.

Now, even though the realist conception so interpreted is not committed to the real existence of Platonic universal entities (for on the medieval realist view universals as such are only objects of the abstractive intellect, which can *consider* a universal nature in abstraction from its individuating conditions, despite the fact that this universal nature cannot exist in itself apart from its individuating conditions in the individuals it informs), apparently, it is still committed to a huge number of rather strange entities, namely, the "inherent universals" ultimately signified by common terms in respect of the individuals falling under them. So, this still seems to justify Ockham's charge that according to this conception "a column is to the right by to-the-rightness, God is creating by creation, is good by goodness, just by justice, mighty by might, an accident inheres by inherence, a subject is subjected by subjection, the apt is apt by aptitude, a chimera is nothing by nothingness, someone blind is blind by blindness, a body is mobile by mobility, and so on for other, innumerable cases."[68] And so realism would still seem to amount to "multiplying beings according to the multiplicity of terms."[69]

67. This is true if we disregard the complications arising from quantification and from insolubilia, which are irrelevant in this connection. Compare *Sophismata,* chap. 2, conclusions 9 and 14, and chap. 8.

68. William of Ockham, *Summa Logicae,* pt. 1, chap. 51, p. 169.

69. Ibid., p. 171, where Ockham explicitly claims that this is the root *(radix)* of the errors of the moderns.

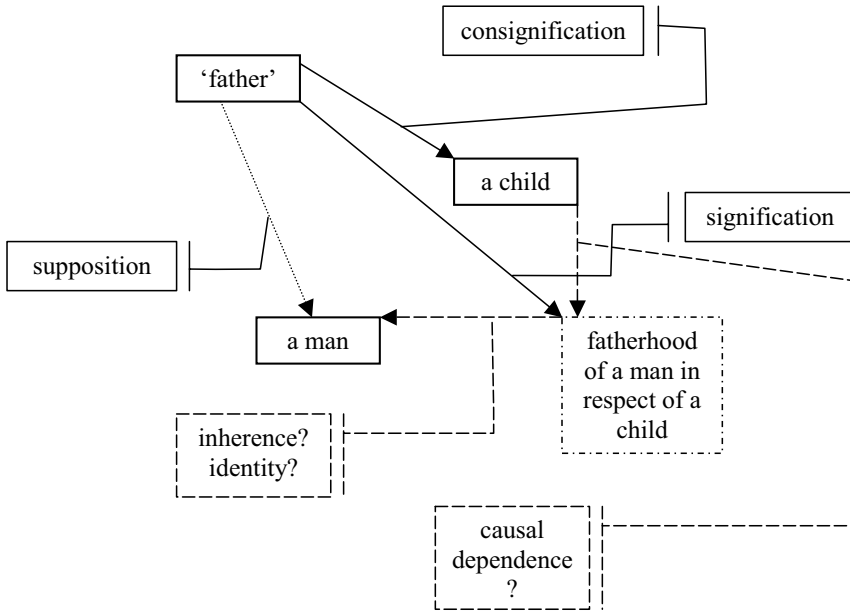

Fig. 3. The *Via Antiqua* Conception of the Semantic Relations of a Relative Term

We should notice, however, that this alleged multiplication of beings with the multiplicity of terms can occur *only* if the ultimate significata of these terms are taken to be distinct both from their supposita and from each other. To illustrate this point, let us take a piece of wax. Let us assume that it is a wax ball with a diameter of one inch. The nominalists would be justified in claiming that the realists are multiplying beings with the multiplicity of terms *only* if the latter were committed to holding that the terms 'wax', 'ball', 'round', 'one-inch wide', and so on, which are all true of this wax ball, signify forms or inherent natures of this wax ball that are all distinct from each other and from the ball itself. For it is only in that case that we should count the following as distinct entities, adding to the number of the beings in our universe: the wax ball, its wax-ness,[70] its ball-ness, its roundness, its one-inch width, and

70. Obviously, when we do not have abstract names for the significata of concrete common terms established by common usage, we have to introduce such contrived, artificial names to do the job. It is precisely this theoretical need of this semantic conception that explains the introduction of contrived abstract terms into the technical Latin of Scholastic philosophy, which later became the inexhaustible source for sneering and ridicule by humanists and, in general, the post-humanistic new intelligentsia, who no longer understood, needed, or even cared about the theory underpinning these "barbarisms."

so on, whatever is signified in this ball, according to the realists, by its true predicates.

But, in fact, there is nothing in the semantic conception of the realists that would *force* a commitment to the distinctness of these significata. To be sure, one may think that it is quite easy to establish such a commitment. For example, when the wax ball is shaped into a cube, then, in accordance with the realists' principles, its roundness ceases to exist, while the piece of wax itself continues to exist, whence the piece of wax in question (and so also its waxness) cannot be identified with its roundness (and ball-ness, for that matter).

We should notice, however, that this simple piece of reasoning, which can be referred to as the "argument from separability,"[71] is valid only if we assume that the piece of wax can cease to be round if and only if the entity that is its roundness ceases to exist, that is to say, that the entity that is its roundness is essentially a roundness.[72] But why should it be? After all, one can as well say that the shape of the piece of wax, which used to be its roundness, is now not a roundness but (given that the same piece of wax is now cubical) a cubical shape (a cubicity). But this only means that the shape that used to be a round shape is now a cubical shape; it need not mean that the shape that used to be a round shape ceased to exist. On the contrary, since the shape of the wax can be understood as being but a certain characteristic arrangement of the dimensions of the wax, nothing prevents the identification of this shape with the dimensive quantity of the wax, which at one time may be arranged so that it falls under the concept of round shape, and at another in a different way, so that it falls under the concept of cubical shape. The only critical point in this identification is that it must abandon the assumption that the terms 'roundness' and 'cubicity' should be regarded as essential predicates of what they refer to and that, instead, they should be construed as referring, at different times, to the permanent but changing dimensive quantity of the same thing that is now round and now cubical. Of course, the same goes for any other terms in any other category. Therefore, whoever wants to get rid of unwanted ontological commitment to distinct "inherent universals" apparently demanded by the realist semantic theory can do so by simply rejecting

71. This type of argument, which was widely used by Scholastics to establish ontological distinctions (often invoking divine omnipotence to maintain the distinct existence of things that cannot exist separately by nature, such as accidents without their subjects and relations without their foundations), is analyzed in detail in my "Buridan's Logic and the Ontology of Modes."

72. For a detailed analysis of the relevance of this point, see Klima, "Ockham's Semantics and Metaphysics of the Categories." in P. V. Spade, ed., *The Cambridge Companion to Ockham* (Cambridge: Cambridge University Press, 1999), pp. 118–42.

the assumption that the abstract terms referring to the ultimate significata of concrete common terms in the realist semantic framework are essential predicates of these significata. In fact, this is precisely what most realists did, identifying the semantic values of terms across categories, especially where the last six categories were concerned, without any danger of inconsistency arising from arguments from separability.[73]

Now, in Buridan's nominalist framework abstract terms do not have the essential semantic function that they did in the realist framework (namely, to refer to something, whatever it is, whose existence verifies the corresponding concrete terms of their personal supposita). Furthermore, whenever Buridan needs to give an account of the semantics of abstract terms, he can identify their semantic values with those of terms in other categories by simply providing the nominal definitions expounding their connotations, which at once "automatically" establishes these terms as denominative, nonessential predicates of their particulars.[74]

Still, the relative ease with which Buridan can handle the apparent ontological commitments generated by the use of abstract terms does not justify the claim that it is *only* in the framework of his nominalist semantics that one can get rid of the unwanted ontological commitment to distinct semantic values of such terms, or that the realist semantic framework necessarily entailed such a commitment. In fact, the realists had their own, rather different tactics to reduce the ontological commitment of their semantic theory, both

73. The foremost authority for such identifications was Aristotle himself, who explicitly identified the act of a patient, a passion, with the act of an agent, an action. Compare *Physics,* bk. 3, chap. 3, 202a12–b29. For further references and a detailed analysis of how such identifications were possible for both realists and for nominalists, although using different logical tactics to reduce the ontological commitment of their respective theories, see my "Buridan's Logic and the Ontology of Modes."

74. See 3.1.3, 3.5.5, 8.2.3. To be sure, this may seem to be contradicted by Buridan's insistence that terms even in the accidental categories are predicated quidditatively of their inferiors. (See 3.5.10, 3.4.1.) We must not forget, however, that the sort of quidditative predication that Buridan is talking about in such contexts does not imply that the particular thing of which such a predicate is actually true cannot lose this predicate as long as it exists, for a predication is quidditative in this broader sense only because the predicate does not signify or connote anything that is not signified or connoted by the subject (although it may well supposit for more). (See 8.2.3–4, 8.6.3.) For example, even though the predication 'This spherical shape is a shape' is quidditative according to Buridan (for nothing is signified or connoted by the predicate that is not signified or connoted by the subject), this does not imply that the thing that is now a spherical shape—according to Buridan, the magnitude of the thing arranged in space in such and such a way—cannot cease to be a spherical shape by a simple modification of its spatial arrangement.

in terms of identifying the semantic values of terms across categories and in terms of distinguishing various diminished senses in which a thing (once it is regarded as distinct from other things) can be said to exist.[75]

To be sure, from the point of view of nominalist logic, "inherent universals" signified by common terms in all categories and other "spurious entities" (such as abstract universals existing only as objects of the mind along with other sorts of *entia rationis,* as well as the total significata of propositions, the notorious *enuntiabilia* or *complexe significabilia*) are semantically superfluous and ontologically weird items.[76] And one should also admit that in the "realist" logic such items *necessarily* emerge in the role of the *semantic values* of terms and propositions. Nevertheless, these semantic values can either be accounted for separately, in a relatively independent ontology (in terms of distinguishing various kinds or senses of being), or they may be "eliminated" by identifying them across categories (that is to say, on this basis, semantically distinct linguistic categories need not be mapped onto correspondingly distinct ontological categories).

Thus, we can conclude that—despite the nominalists' claims to the contrary—what made the big difference between the realists' and the nominalists' approach was not the difference in the ontological commitment of their respective semantic theories but rather the more basic differences in their conceptions concerning how words, concepts, and things are related to one another, and the resulting differences in the various tactics by which they handled issues of ontological commitment and other metaphysical problems within their alternative semantic frameworks. For this reason, the new, nominalist semantics did not, and could not, replace the older realist framework by conclusively refuting it; rather, it simply emerged as an alternative way (indeed, "the modern way," *via moderna*) for doing logic, philosophy, and science in general.

The emergence of late medieval nominalism, largely owing to Buridan's extraordinary logical acumen as well as to his pragmatic, decidedly nonrevolutionary attitude, generated a new type of theoretical conflict, quite unparalleled in the history of medieval philosophy (and perhaps the whole previous history of pre-modern philosophy in general): it was no longer the conflict of incompatible theories formulated within basically the same conceptual framework, but it became the conflict of competing "paradigms," in a

75. A comprehensive comparison of these various tactics to reduce ontological commitment is provided in Klima, "Ontological Alternatives vs. Alternative Semantics in Medieval Philosophy," *S. European Journal for Semiotic Studies* 3 (1991): 587–618.

77. For a systematic overview of these "spurious entities" see my "Changing Role of *Entia Rationis* in Medieval Philosophy."

manner all too familiar to us, the historical heirs of these developments. From this point of view, the emergence of medieval nominalism as an alternative way in late medieval philosophy can be regarded as the first and most significant move toward modern philosophy, where opening up radically different conceptual alternatives, as opposed to propounding alternative theories within basically the same conceptual framework, has become the rule, rather than the exception. Clearly, we can understand our modern situation better if we carefully study this phenomenon at its roots, when it first emerged in a very different intellectual context.

Treatise 1
On propositions

Preface

"Just as the commander is the savior of the army, so is reasoning with erudition the commander of life"—this statement was written by Aristotle in a certain letter of his to Alexander, which begins "Aristotle to Alexander, greetings."[1] The commander saves the army in two ways. First, by repelling the enemy, second, by leading [the soldiers] to their desired goal. This is why it is said in the seventh book of the *Politics*[2] that legislators, who are commanders and rulers, frame laws both for war, with reference to the first point, and for peace, with reference to the second.

Now it is in these two respects that logic (which is to be called reasoning with erudition, because it teaches us in all modes of reasoning and in every branch of science to seek knowledge of things not known to us) is compared to the commander. For logic has one part, namely, the doctrine of logical fallacies [*sophistica*], which eliminates false arguments, and another, investigative, part, namely dialectic [*dialectica*] and the doctrine of demonstration [*demonstrativa*], which regulates true reasonings. But the elimination of falsity is to the investigation of truth as is the repelling of the enemy to the procurement of peace for the citizens and the tranquillity of the state; and for this reason logic is reasonably compared to the commander.

Again, Aristotle says, in bk. 7 of the *Politics,*[3] that the people most honored for their virtue, contemporary as well as ancient, have asserted that there are two most choiceworthy ways of life: the contemplative, and the civic, or active, life. But it is obvious that logic is useful for both; for Aristotle, in bk. 1 of the *Topics,*[4] says that a dialectical problem is a consideration urging toward choice or avoidance, with respect to the active life, or toward truth and knowledge, with respect to the speculative life. Therefore, it was rightly stated that 'just as the commander is the savior of the army, so is reason with erudition the commander of life', namely, of human life, both contemplative (i.e., speculative) and active.

1. The quotation comes from the introductory letter of the *Rhetoric to Alexander,* a work of Anaximenes of Lampsacus, falsely attributed to Aristotle. See "Rhetoric to Alexander," in *The Complete Works of Aristotle,* ed. J. Barnes (Princeton: Princeton University Press, 1984), p. 2271, ll. 24–25. For the history of the text see M. Fuhrmann, *Untersuchungen zur Textgeschichte der pseudoaristotelischen Alexander-Rhetorik.* (Wiesbaden: Verlag der Akademie der Wissenschaften und der Literatur in Mainz in Kommission bei Franz Steiner Verlag GMBH, 1964).

2. Aristotle, *Politics* VII.13.1334a4–6.

3. Ibid., VII.2.1324a29–34.

4. Aristotle, *Topics* I.1.104b1–4.

Therefore, wishing to learn something in general about logic in its entirety without an excessively detailed investigation, I have chosen to deal in particular with that short treatise of logic which the venerable professor, master Peter of Spain, composed a while ago, by commenting on and supplementing it; indeed, occasionally I am going to have to say and write things that differ from what he has said and written, whenever it appears to me suitable to do so.

1.1 Chapter 1: Some preliminaries

1.1.1 On dialectic

(1) Dialectic is the art of arts, having access to the principles of all inquiries.[5] (2) And thus, in the acquisition of [the knowledge of] the sciences, dialectic has to be first. (3) [The term] 'dialectic' derives from *dia,* meaning 'two', and *logos,* which is 'speech' [sermo], or *lexis,* which is 'reasoning' [*ratio*], [dialectic] thus being as it were the speech or reasoning of two parties, namely, of the opponent and the respondent in a disputation.

We shall divide this book into nine treatises, the first of which is going to deal with propositions and their parts and attributes [*passionibus*].[6] The sec-

5. See Peter of Spain, *Tractatus,* called afterwards *Summule logicales,* ed. L. M. de Rijk (Assen: van Gorcum, 1972), p. 1. According to the critical apparatus of this edition, the phrases *ars artium* (art of arts) and *scientia scientiarum* (science of sciences) occur only in some variants of the text, in accordance with Buridan's remarks below. The phrase derives ultimately from Aristotle, *Topics* I.2.101b3–4.

6. The term *passio,* deriving from the verb *pati* (to suffer, to be affected/acted on, to undergo change), has the primary sense of something affecting a subject (which receives the action of an agent). But since the relation between the *term* signifying such an affection and the *term* that signifies the subject is analogous to the relation between the affection itself and the subject itself, the term signifying the affection is also called a *passio* (and the term signifying the subject is also called *subiectum*). Therefore, in this technical sense, whenever a passio is correlated with a subiectum, referring to a *term* that is attributed to a subject term in an act of predication, I will translate *passio* as 'attribute'. Whenever *passio* is used to refer to the correlative of some action, however, as is normally the case in the context of Aristotelian physics, or to the correlative category of the category of action, or to the third species of the category of quality discussed below (3.5.4.), as is usually the case in the context of the theory of

ond will be about the predicables, the third about the categories, the fourth about suppositions, the fifth about syllogisms, the sixth about the dialectical loci[7] [*loci dialectici*], and the seventh about fallacies. The eighth will be added to deal with divisions, definitions, and demonstrations, which our author did not treat of in his book; and the ninth will concern sophistic exercises [*practica sophismatum*]—but in this lecture-series I do not include the reading of this latter treatise along with the reading of the other eight treatises.[8]

I will divide the first treatise into eight chapters. The first concerns some preliminary considerations before directly addressing the topic of propositions, their parts and attributes [*passiones*]. The second concerns the integral parts and the genus of propositions, namely, names and verbs, and expressions, respectively. The third concerns propositions and the divisions of propositions. The fourth is about the oppositions of categorical propositions, the fifth about their equivalences, and the sixth about their conversions; the seventh will concern hypothetical propositions in particular, and the last chapter will deal with modal propositions in particular.

The first chapter can be divided into six parts. The first propounds what dialectic is and whence [its name] derives. The second shows that these considerations should begin with [a consideration of] sound. The third discusses sounds and divides them into utterances and non-utterances. The fourth discusses utterances and their division into significative and nonsignificative utterances, the fifth is about the division of significative utterances into those that are significative by convention [*ad placitum;* at will] and those that are significative by nature, and the sixth concerns the division of conventionally significative utterances into complex and incomplex utterances.

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categories, I will use the customary English transcription 'passion'. To be sure, even despite existing translational traditions to this effect, this may occasionally sound odd, given the primary contemporary meaning of the term indicating some strong emotion (which is actually quite fitting in the case of the third species of quality, especially in 3.5.4(2)). But this will be very useful when Buridan exploits some of the conceptual relations between the notions of 'passion' in the technical senses intended here and those of being affected, being acted on, undergoing change, suffering (as the Passion, i.e., the suffering of Christ), and passion in the emotional sense, all of which are conveyed by the Latin *passio.*

7. The dialectical loci to be treated by Buridan in the sixth treatise are also commonly referred to in English by the term *topic,* deriving from the the corresponding Greek term, meaning simply 'place'. See Treatise 6 n. 1.

8. This remark quite clearly indicates that the text we have is based on several lecture courses. It appears that Buridan delivered this lecture series several times over the course of his career at the University of Paris, and only sometimes included the ninth treatise, *On Sophisms* (which may have served as a collection of logical exercises for advanced students). The present translation also contains the ninth treatise, despite what Buridan says here.

The first part contains three sections, namely, a description of dialectic, a corollary [of this description], and the etymology [*unde dicitur*] of 'dialectic'.

Concerning the first section we should note that a certain [other version of our] text has [the formulation]: 'dialectic is the art of arts, the science of sciences . . . etc.', but it is more correct to say only that it is the art of arts. For the names 'art' and 'science' are sometimes taken broadly, and sometimes strictly or properly. If they are taken broadly, then we use them interchangeably, as synonyms; hence, taken in this way, in this description it would be sufficient to insert only one of these two names. Indeed, logic should not even be called the science of sciences, for this would indicate a certain excellence of logic with respect to [all] other sciences, which it cannot have with respect to metaphysics; in fact, metaphysics, rather than logic, should more truly be called the science of sciences, having access to the principles of all inquiries. But when the names 'art' and 'science' are taken strictly, then, in [accordance with] bk. 6 of the *Ethics*,[9] there are five intellectual habits, or virtues, distinguished from one another, namely, understanding, wisdom, prudence, science [or knowledge: *scientia*], and art. Therefore, taken in this way no such habit is at the same time art and science; in fact, logic thus understood is an art, rather than a science.

Second, we should note that dialectic (i.e., logic) is rightly said to be the art of arts, by reason of a certain superiority it has over other arts, [namely], in virtue of its utility and the generality of its application to all other arts and sciences. By reason of this generality, which it shares with metaphysics, it has access to disputations that concern not only the conclusions but even the principles of all sciences. Still, logic and metaphysics differ in their capacity [*modo potestatis differant*], as is said in bk. 4 of the *Metaphysics*, and as is to be explained there[10] in more detail.

As to the corollary inferred in the second section, we should note that of course positive grammar [*grammatica positiva*] has to be learned first, by means of which the master is able to communicate with the disciple, whether it be in Latin, French, Greek, or Hebrew, or whatever else. Neither normative grammar [*grammatica regularis*], however, nor any other art or science, which makes things that are first doubtful or unknown become known by means of things that are better known, can be satisfactorily acquired without a previous [training in] logic, since such a science needs to use syllogisms or other argumentations, the doctrine of which is taught by logic.

9. Aristotle, *Ethics* VI3.1139a15–17.

10. Aristotle, *Metaphysics* IV.2.1004b18–28; J. Buridan, *Quaestiones in Aristotelis Metaphysicam: Kommentar zur Aristotelischen Metaphysik* (Paris, 1518; reprint, Frankfurt am Main: Minerva, 1964), bk. 4, q. 4.

The third section is clear enough, except that it seems to me that although 'dialectic', properly speaking, is distinguished from the part of logic that is called 'demonstrative', nevertheless, broadly speaking it can be extended to cover the whole of logic. For there are not only either dialectical or sophistical disputations, but there are also doctrinal, or demonstrative ones, as is clear from bk. 1 of the *Sophistical Refutations*.[11] And so we can say that 'dialectic' is taken here broadly for 'logic'.

1.1.2 The prerequisites of disputation

> But since there cannot be a disputation, except by the mediation of speech, nor can there be speech, except by the mediation of utterances, and since every utterance is a sound, we should therefore start from sound, as from that which is prior.

The second part shows that we should begin with sound. For in most cases the task of logic is exercised in a disputation, which cannot take place without speech, nor can speech occur without utterance; hence it is useful to say something about utterance. But since every utterance is a sound, but not conversely, so that the name 'sound' is more general than the name 'utterance', we should begin by saying something about sound, not because sound is more worthy, as another text claims, but because of this generality. For those things that are more universal are better known to us, and we should begin with things that are better known; whence it is concluded in bk. 1 of the *Physics*[12] that we should proceed from the universals to the singulars, i.e., from those that are more universal to those that are less universal.

1.1.3 On sound

> (1) A sound is a quality sensible by hearing *per se* and properly.[13] (2) Some sounds are utterances; some are non-utterances. (3) An utterance is a

11. Aristotle, *On Sophistical Refutations* 2.165a38–b11.

12. Aristotle, *Physics* I.1.184a24–25.

13. The qualifications *per se* and 'properly' indicate standard Aristotelian distinctions concerning sensible objects. For example, a white cube, as such, is not a *per se* object of our sense

sound uttered by the mouth of an animal and formed by natural instruments. (4) A sound that is a non-utterance is any sound that is not an utterance.

The third part contains four sections. The first provides a description of sound, which I formulate in the following manner: a sound is a quality sensible by hearing *per se* and properly, just as a flavor is a quality sensible by taste *per se* and properly, and a scent by smell, and a color by sight (extending the name 'color' to cover also light), and B by touch, if we were to posit the name 'B' as the proximate genus of the names 'warmth' and 'coldness', and 'wetness' and 'dryness'.

We should note, however, that there is a serious doubt as to whether the senses perceive color or sound as distinct from the colored or sounding subject, or whether they recognize both the accident and the subject together in accordance with the concepts from which [the terms] 'colored', 'warm', 'sweet', etc. are derived [*sumuntur*]. But this should be considered in [connection with] the book *On the Soul*,[14] for the preliminary points made here do not belong to logic but to [a] higher [order of] philosophy,[15] and whatever is said here should be corrected in accordance with what will be determined there.

The second section divides sound into utterance and non-utterance. And this is a division of a genus into its species, or a division akin to that kind. For we should not discuss here whether the name 'utterance' is indeed a species of the name 'sound'; but if the former is posited as a species of 'sound', then, since there is no name imposed on the opposite species, we express this by adding the infinite name 'non-utterance' to the name 'sound'.

The third section describes utterance, according to the opinion of this author, saying that an utterance is a sound issuing from the mouth of an animal and formed by natural instruments. Since it does not belong to logic, I do not

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of taste, since it is not perceivable by taste insofar as it is white or insofar as it is a cube, but, provided it is a sugar cube, it is a *per se* object of taste as something sweet, for it is perceivable by taste as such, i.e., as something sweet. Also, as something sweet, the sugar cube is the proper, or exclusive, object of taste, because we do not perceive it as such, namely, as something sweet, except by taste. In general, a sensible object O is a *per se* object of a sense S if and only if S perceives O as an O, otherwise O is a *per accidens* object of S. And O is a *proper* object of S if and only if O is not perceivable by any other sense as an O (but of course it might be perceivable on account of being also a P).

14. Buridan, *Quaestiones in De Anima [De prima lectura]*, l. 1, q. 5, in J. Buridan, *Le traité de l' âme de Jean Buridan (Prima lectura)*, ed. B. Patar (Louvain-la-Neuve: Editions de l'Institut Supérieur de Philosophie; Longueil, Editions du Préambule, 1991).

15. The phrase Buridan uses here [*de altiori philosophia*] echoes the opening words of Boethius's translation of Porphyry's *Isagoge*.

intend either to verify or falsify this description. Aristotle, however, in bk. 2 of *On the Soul*,[16] propounds a different description of utterance, namely, that an utterance is the sound of the exhaled air striking against the trachea along with an intention [*imaginatio*] of signifying; but all these points should be discussed in [connection with] bk. 2 of *On the Soul*.[17] We should also note that the author even added a two-line mnemonic verse listing the organs by which an utterance is formed, saying: 'there are nine organs: throat, tongue and the palate, four teeth and the two lips together'; or someone else added these lines in my copy.[18] But I omit these, for an utterance could be formed even without teeth and tongue, whereas the lungs and the trachea would indeed be necessary along with the vocal cords of the trachea in the throat; but these matters should be discussed elsewhere.

Concerning the fourth section we should concede that what is said there, namely, 'every sound that is not an utterance is a sound that is a non-utterance', is true, but we should not maintain that this is some sort of a definition.

1.1.4 On utterances

> (1) Some utterances are significative; others are nonsignificative. (2) A significative utterance is one that represents something to the hearing, as 'man' represents man, or the moans of the sick represent pain, or the barking of dogs represents anger or joy. (3) A nonsignificative utterance is one that represents nothing to the hearing, as for example, 'buba'.

The fourth part has three sections. The first presents the division of utterance into significative and nonsignificative. But this immediately seems to contradict what Aristotle says in bk. 2 of the *On the Soul,* where he states that every utterance is significative: 'not every sound of an animal is an utterance, but it is necessary that what is sounding should be animated and have some intention [*imaginatio*] of signifying something; for an utterance is a significative sound'.[19] To this we should briefly reply that since an utterance cannot be uttered without some concept, every utterance signifies that the animal uttering it conceived something. So the author in the statement above refers by

16. Aristotle, *On the Soul* II.8.420b28–30.

17. *Expositio in De Anima [De prima lectura],* l. 2, treatise 4, chap. 3, in Buridan, *Le traité de l'âme de Jean Buridan (Prima lectura).*

18. See Peter of Spain, *Tractatus,* p. 1.

19. Aristotle, *On the Soul* II.8.30–33.

'significative utterance' to something that notifies the man or animal hearing it what thing (or things) is (or are) conceived and in what manner by the utterer (and I mean notifies, either by nature or by voluntary stipulation [*institutio*]); whereas he calls 'nonsignificative utterances' those utterances on the basis of which, although they do indicate that the utterers conceive something, the listeners do not know by nature or by voluntary stipulation what the utterers conceive.

In the second and third sections the author describes the members of his division, and the whole is to be interpreted in the light of the foregoing.

1.1.5 The division of significative utterances

(1) Some significative utterances are significative by nature, some by convention. (2) That utterance is significative by nature which represents the same for everyone, as do the moans of the sick and the barking of dogs. (3) A conventionally significative utterance is one that represents something in accordance with the will of the name-giver, as 'man' represents man.

The fifth part is divided into three sections, which need almost no exposition, except to add that a conventionally significative utterance sometimes has the same signification throughout an entire language, as 'homo' [man] or 'asinus' [donkey] does for every Latin [speaker], but sometimes it is imposed for a short time with some determinate signification, by the convention and agreement of disputants, as when we say that A should stand for man, B for stone, C for animal, etc., as professors and disputants often do.

1.1.6 The division of conventionally significative utterances

Some conventionally significative utterances are complex, and some are incomplex: complex, as are expressions; incomplex, as are nouns and verbs.

To make clear what has been and what is to be said, and given that incomplex significative utterances are the terms of expressions, we should say something, by way of a slight digression, about significative terms and expressions.

It should, therefore, be realized that three kinds of expressions [*oratio*] and three kinds of terms [*terminus*] or words [*dictio*] can be distinguished, as is touched upon at the beginning of *On Interpretation:*[20] namely, mental, spoken, and written. The combination [*complexio*] of simple concepts is called a 'mental expression' [and results from] compounding or dividing [*componendo vel dividendo*] by means of the second operation of the intellect, [21] and the terms of such an expression are the simple concepts that the intellect puts together or separates.[22] Now, just as simple concepts are designated for us by means of simple utterances, which we call 'words', so also do we designate[23] a combination of simple concepts by a combination of words; it is for this reason that a spoken expression is an utterance made up of several words, which signifies for us the combination of concepts in the mind. Further, a spoken expression should be called an 'expression' only insofar as it designates a combination of concepts in the mind. For if the whole utterance 'A man runs' were imposed to signify simply stones, as the utterance 'stone' does, then 'A man runs' would not be an expression but a simple word, as is 'stone'. Hence, something is called a spoken expression or proposition only because it designates a mental expression or proposition, and a spoken proposition is called true or false only because it designates a true or false mental proposition, just as a urine sample is said to be healthy or unhealthy only because it designates that the animal is healthy or ill.[24] It is in the same way that every utterance that appropriately designates a simple concept by convention [*ex institutione*] is said to be incomplex, [precisely] because it is subordinated in order to designate a simple concept.

20. Aristotle, *On Interpretation* I.16a4–6.

21. The "second operation of the intellect" is the second of the three operations of the intellect commonly distinguished in scholastic philosophy (based on Aristotle's relevant considerations), namely, (1) the formation of simple concepts *(indivisibilium intelligentia)* as a result of abstraction, (2) the formation of judgments (or other complex concepts) by combining the concepts produced by the first operation *(compositio et divisio),* and (3) reasoning *(ratiocinatio),*which uses the propositions formed by the second operation to arrive at the cognition of unknown truths on the basis of known truths.

22. 'Composition', 'compounding,' or 'putting together' [*componere*] in this context means the combination of two categorematic terms into a proposition by means of an affirmative copula, whereas 'division', 'dividing,' or 'separating' [*dividere*] means their combination into a negative proposition, by means of a negative copula.

23. 'Designate' [*designat*] is apparently Buridan's standard technical term to express the relations in which a spoken phrase stands to what it immediately signifies, namely, the mental "phrase" to which it is subordinated, or the analogous relation between a written and a spoken phrase (as illustrated by his example of Hebrew letters below).

24. See n. 27 below.

But we should also clearly realize that since it is in accordance with our will [*ad placitum nostrum*] that utterances are instituted [*instituuntur*] to signify our concepts, it often happens that we impose one whole utterance to signify a huge mental expression, in such a way that although that utterance signifies this mental expression, no part of that utterance taken separately signifies any simple concept of this mental expression. Under such circumstances such an utterance is called a 'word' by the grammarian, as it is not divided into parts any of which would separately signify something. But it would not be inappropriate for the logician to call [such an utterance] a 'significative expression', e.g., if the name 'Iliad' were to be imposed to signify the same as the whole Trojan story,[25] or [if he considered] the case that the name 'vacuum' is imposed to signify the same as the expression 'place not filled with body', or the case that we can agree in a disputation that by A we understand the same as we do by 'golden mountain' and by B the same as by 'risible[26] horse' and by C the same as by 'A man runs', and so forth. Under such circumstances, C would then be a spoken proposition, attributively speaking,[27] because it

25. Buridan's actual Latin phrase is: *imponeretur ad significandum aequivalenter.* Literally, this could be translated as 'were to be imposed to signify equivalently'. But this English phrase would actually convey a *weaker* sense of synonymy than the simpler 'to signify the same'. For Buridan's phrase is used to express the relation of strong synonymy: two phrases are synonymous in this sense if they have the same significata (and the same connotata, if the phrase in question is connotative) signified (and connoted) in the same manner. In fact, two phrases are synonymous in this way because they are subordinated to one and the same concept. For Buridan's example see Aristotle, *Metaphysics* VII.3.1030a10.

26. Here and henceforth the term 'risible' is used not in the colloquial English sense of 'laughable', 'ridiculous', but in the technical sense of 'capable of laughing', in which it was used by the medievals (following Aristotle and Porphyry) as the stock example of a property [*proprium*], i.e., an inseparable but nonquidditative predicable convertible with a species, in this case the species being 'man' (in the sense of 'human being'). With this understanding of the term it is clear that 'risible horse', and thus the term B it defines, would be meaningful, despite the fact that it cannot refer to anything in the context of a proposition such as 'A risible horse is a horse', or 'B is a horse', whence such a proposition would be false.

27. 'Attributively speaking', i.e., in the same manner as 'healthy' applies to a urine sample by the *analogy of attribution* [*analogia attributionis*], because it is a sign of the health of an animal. The basis of this type of analogy in general is that if a term T is properly predicable of a (kind of) thing A, then T can be predicated in an analogous, secondary sense also of another (kind of) thing B that is somehow related to A. Therefore, in the case in question, C would be called a proposition only because it would signify a mental proposition, not because it would have any of the inherent attributes of a spoken proposition. That is to say, C would not be called a proposition because it is a spoken expression that signifies some truth or falsehood, for it is not an expression in the first place, given the fact that an expression should be an utterance that has separately significative parts, which does not hold for C.

would designate a mental proposition; however, the grammarian would not call it a proposition, but rather a simple utterance, for it would not be divisible into utterances any one of which would signify some concept separately.

We should also note that just as conventionally significative utterances have the function of signifying mental concepts, so do written marks have the function of signifying utterances. Thus, just as utterances signify extramental things only by the mediation of mental concepts, so do written marks signify concepts only because they signify the utterances that signify those concepts. This is why you cannot read Hebrew letters when you see them, for you do not know what utterances they designate. Again, those who know what utterances our letters designate, but who do not know the significations of Latin utterances, correctly read the psalms, but they apprehend nothing further as to the signification of those letters, since they do not know the significations of Latin utterances; for the letters of the written word 'homo' signify man only because they signify the utterance that signifies man.

We should note, therefore, that an inscription is said to be an expression only because it signifies a spoken expression, and a spoken expression is said to be an expression only because it signifies a mental expression. A mental expression, however, is called an expression not because it signifies yet another expression in reality but because it is a combination of several concepts in the mind, and these need not signify diverse things. For the same most simple thing, namely, God, can be conceived of in terms of a great number of diverse concepts, which the soul can compose and divide in itself, and from which it can form a mental expression. Similarly, a written word is called a word or a term only because it signifies a spoken word. And the spoken word is called a word by the logician, properly speaking, if it is significatively subordinated to a simple concept, but it would be called a word by the grammarian even if it were not subordinated to a simple concept but to a [mental] expression, namely, if it were imposed in itself and as a whole together upon that mental expression, so that no part of it would separately signify some part of that mental expression. For example, if the word 'Iliad' were imposed to signify just as much as the whole text of the Trojan story, it would nonetheless be called a word, because no part of it, namely, neither, 'I', nor 'li', nor 'ad', would separately signify anything of that story.

But you will immediately ask: 'If there is not some sort of combination in the thing or things signified, what then does the mental expression signify by which the intellect asserts that God is God or that God is not God?' I reply that neither of these two expressions signifies anything more, or anything else in external reality [*ad extra*] than the other. For both of them signify in external reality only God; but the affirmative signifies Him in one way and the negative signifies Him in another way, and these [two different] ways are those

complexive concepts[28] in the soul that the second operation of the intellect adds to simple concepts, and which are designated by the spoken copulas 'is' and 'is not'.

In the light of the foregoing, the exposition of the sixth part should be obvious. For a conventionally significative utterance should be said to be incomplex and one word, if the whole together, in itself and undividedly, is subordinated so as to signify a simple concept. And it is said to be incomplex and a single word by a grammarian even if it designates a long mental expression, if it is imposed as an undivided whole, so as to signify that expression, as in the case of the utterance 'Iliad'. But a complex utterance, which is called an 'expression', is composed of several words constructed together.

1.2 Chapter 2: On names, verbs, and expressions

1.2.1 On names

(1) A name[29] is a conventionally significative utterance, [signifying] without time,[30] of which no part is significative separately, and which is finite and uninflected [*recta*]. (2) 'Utterance' [*vox*] is put in the definition of name as the genus; 'significative' is added so as to exclude nonsignificative utterances; 'conventionally' [*ad placitum*] is added so as to exclude

28. Simple concepts of the soul are combined into complex concepts by means of *complexive* concepts. For example, in the case of the spoken sentence 'God is God', the simple concept by which we conceive of God is combined with itself into the complex mental proposition that is designated in English by this sentence (and in Latin by the sentence *Deus est Deus*), by means of the complexive concept of the present-tense affirmative copula designated in English by the utterance 'is' (and in Latin by the utterance 'est').

29. 'Name' in this context covers not only nouns but also adjectives and pronouns—in general, any words to which the definition applies.

30. 'Signifying with/without time' [*significare cum/sine tempore*] are the descriptions Aristotle gives of the distinctive features of verbs and names, respectively, referring to the peculiarity of verbs, not present in names, that they always signify whatever they signify as past, present, or future (indicated by the tenses of the verb). A somewhat smoother translation could be 'signify temporally/atemporally', but this solution would cause further difficulties in rendering Buridan's subsequent discussion.

> naturally significative utterances; 'without time' [*sine tempore*], so as to yield a distinction from verbs; 'of which no part is significative separately' is added so as to exclude expressions whose parts signify separately; 'finite' [*finita*] is put there so as to exclude infinite names, such as 'non-man', which is not a name according to the dialectician, but is an infinite name;[31] 'uninflected' is added so as to exclude inflected [or oblique, *obliqua*] names, such as "Cato's" [*Catonis*], 'to Cato' [*Catoni*], which are not names according to the dialectician, but only cases of names; whence only the nominative, or uninflected, name is said to be a name.

The second chapter is about the integral parts, and about the genus, of propositions: namely, about the name and the verb, and 'expression',[32] respectively. And it contains three principal parts: the first is about the name, the second about the verb, and the third about the expression. The first part has two sections, namely, the definition of 'name' and the explanation of the definition.

And the first section is clear enough in the light of the second. We should realize, however, that what is defined here is a spoken name, and neither a written nor a mental one; for a mental name is not an utterance, but it is a concept in the soul, nor does it signify by convention [*ad placitum*], but by nature. And it will be in a similar manner that the subsequent discussion will concern spoken verbs, expressions, and propositions.

Concerning the second section, however, we should remark that perhaps not everything that is stated here is true in the strict sense, literally [*de proprietate sermonis*], but needs to be expounded, as did the definition of utterance. For even if 'utterance' is put in this [section's] definition as the genus, nevertheless, it is not truly the genus of 'name'; rather, the words 'name' and 'verb' are related to the word 'utterance' as are attributes [*passiones*] to a subject; for they supposit for the same things as does the word 'utterance', and they add some extraneous signification, or connotation, to the signification of the word 'utterance', namely, that [the things they supposit for] are voluntarily imposed to signify certain things, [etc.]; and these utterances are not determined to this signification by the general account of 'utterance' nor by the specific accounts of the species of 'utterance', say, by the accounts of, e.g., 'deep-pitched utterance' or 'high-pitched utterance'; nevertheless, this does not mean that 'utterance' should not be put into the definition of 'name', for an attribute [*passio*] is correctly defined in terms of its subject. We should therefore say that the author does not intend to define mental or written names, but only spoken

31. Aristotle, *On Interpretation* 1.16a30–34.

32. The word 'expression' is enclosed in quotation marks because according to Buridan a genus is a (written, spoken, or mental) term.

names; this is why he says: 'a name is an utterance', so as to exclude mental and written names and other things that are not utterances.

Next, there is a doubt concerning the part: 'without time'. For the names 'month' and 'day' signify time, and time is not without time; therefore these do not signify without time.

I reply that by 'signifying with time' or 'without time' we do not mean signifying time or not signifying time as a principal significate, but connoting or not connoting time by the grammatical modes of signification. For example, 'I lecture' or 'I lectured' do not signify time, but rather lecturing as being present or past; 'day' or 'month', however, signify time, but not as present, past, or future.

Then there is a doubt concerning the part 'of which no part is significative separately'. For *dominus* [lord, master] is a name, but *do* [give] and *minus* [less] are utterances that are significative separately, and *do* is a verb and *minus* is an adverb. And there are also some compound names that are put together from two whole names, as, e.g., *paterfamilias* [father, head of the family], the parts of which are significative separately and in themselves, as is *pater* [father] significative in itself, and *familias* [of the family] significative in itself.

Solution. Concerning the first counterinstance we should say that the utterances *do* and *minus* are by no means parts of the name *dominus* insofar as they are separately significative, but only as if they signified nothing separately.

Concerning the second it appears to me that it has to be said that a word that is composed of several words retaining precisely the significations that they would have separately can correctly be called an expression by the logician, for it designates a mental expression; however, it is called a word by the grammarian, for after the imposition of its parts, it is voluntarily imposed to signify as a whole together and in itself all the things together that its parts signified separately. I could also respond otherwise, as I wrote in my commentary on *On Interpretation*,[33] but I omit that [response] for now.

But the further query is raised as to why an infinite name is not said to be a name. To this we easily respond that a name has to be one word, but an infinite name, such as the utterance 'non-man', is one word according to neither the grammarian, nor the logician; but according to the grammarian it is a two-part expression, namely, a name and an adverb, and according to the logician it comprises a syncategorematic and a categorematic word.[34]

But a major doubt concerns the point as to why an oblique name such as

33. See J. Buridan, *Quaestiones longe super librum Perihermeneias,* ed. R. van der Lecq (Nijmegen: Ingenium, 1983), bk. 1, q. 4.

34. For Buridan's detailed discussion of this distinction see 4.2.3.

'man's' or 'Cato's' is not said to be a name. And Aristotle gives the reason[35] that from every name with the addition of the verb 'is' or 'was' or 'will be' there results a true or false proposition [*enuntiatio*], which is not the case with oblique names. But then, if this were the real reason, it would follow that an adjectival name, taken as an adjective and not substantivated in the neuter gender, would not be a name, for according to the grammarian it could not be a subject of the verb [*non possit reddere suppositum verbo*], since 'A white is' [*albus est*] is ungrammatical, and hence neither true nor false.[36]

Finally, it would seem that this description of 'name' is altogether invalid, for it applies to syncategorematic terms, such as 'and' and 'or', which are not names, and it also applies to pronouns, which are not names, either.

Concerning pronouns, however, I reply briefly that Aristotle held that names and pronouns are considered one part of speech by the logician, for both can act as subject to a verb and constitute with the verb a true or false expression.

As far as syncategorematic terms are concerned, it appears to me that in order to exclude them we should add a subpart to the definition of name, saying: 'A name is a conventionally significative, categorematic utterance, [signifying] without time, such that no part of it is separately significative'. And it seems to me that the definition with this addition is an entirely satisfactory definition of 'name' for the logician without the addition of the further parts 'which is finite' and 'is uninflected', and this is why Aristotle [originally] did not put them in the definition of the name. But later he added that an infinite name is not a name so as to eliminate a [possible] doubt [concerning this point], for someone might believe the opposite thesis for the reason that such a name may be the subject in a categorical proposition. But what Aristotle said about oblique names did not entail his denying that they are names; rather, he only wanted to say that they are not names in the strictest sense of 'name', given that they cannot constitute a true or false enunciation along with a verb.

35. Aristotle, *On Interpretation* 1.16b1–5.

36. By contrast, if the subject were substantivated in the neuter gender—i.e., if the adjectival term were taken in the neuter gender and were placed in the subject position in a sentence so as to function as a substantive noun, as in *Album est,* which has the import of '[A] white [thing] is', then the sentence would be grammatical. See 1.3.5 n. 67.

1.2.2 On verbs

(1) A verb is a conventionally significative utterance, [signifying] with time, such that no part of it is separately significative, but which is finite and in the present tense [*finita et recta*]. (2) [The part] 'with time' is here given so as to exclude names; while the other parts are provided for the same reasons for which they were placed in the definition of names. (3) Further we should realize that the dialectician posits only two parts of speech, namely, the name and the verb; all the other parts of speech he calls 'syncategorematic', i.e., consignificative.

The second part contains three sections, namely a description, the explanation of the definition, and a notable point.

As to the first section, it appears to me that Aristotle did not provide this definition, for he did not append the parts 'finite' and 'in the present tense', but rather added the part: 'and is always an indication of the predication of something about something else'.[37] Nevertheless, it is true that after this definition Aristotle says: "I do not call 'does not run' and 'does not work' verbs,"[38] and this has to be expounded as was [the similar point] concerning infinite names. He also says that 'will run' and 'ran' are not verbs, because they are not the primary forms of a verb; still, broadly speaking, they are to be called verbs, just as the similar point was made in the case of oblique names.

The second section is clear. But one queries why Aristotle appended the part 'and is always an indication of the predication of something about something else'. In reply to this we have to say that he did not append this as a part of the definition of verb, but as a certain property of verb, for a verb, taken significatively and verbally, according to the logician, always is a predicate, or implies a predicate, or is at least the copula joining the predicate to the subject.

The third section, as here formulated, is rather dubious, for by these words the author seems to mean that a verb is not syncategorematic. But this is false in respect of the verb 'is' insofar as it is precisely the copula of a categorical proposition; for such a verb is truly consignificative, and not significative by itself, according to Aristotle, in bk. 1 of *On Interpretation,* where he says: "nor [do you signify anything] if you utter 'is' in itself; for it is nothing, but it consignifies a certain composition, which cannot be understood without the components."[39]

Furthermore, we should not assume that all adverbs are purely syncategorematic. For 'somewhere' is equivalent to 'in some place' and 'sometime'

37. Aristotle, *On Interpretation* 1.16b6–8.

38. Ibid., 1.16b12–16.

39. Ibid., 1.16b20–26.

amounts to 'at some time'; but without a doubt the utterances 'in some place' and 'at some time' can be predicates or subjects, or parts of predicates or subjects, just as oblique names can be; therefore, 'sometime' and 'somewhere' should not be regarded as purely syncategorematic, unless we wanted also to regard all oblique names as syncategorematic. And if it is pointed out that they include syncategoremata, I would say that the same holds for many other names, such as 'no-one', 'nothing', 'nobody', indeed, even 'everything', 'whoever', 'whole', and many others. We must not think either that the logician should exclude syncategoremata from his consideration; on the contrary, they cause almost all the difficulties in logic. It seems to me, however, that Aristotle in *On Interpretation* only wanted to describe name and verb insofar as they are the principal parts of an enunciation, for the reason that from a simple name and a simple verb one can constitute an enunciation, but never in the absence of a name or a verb. But Aristotle did not deny that in many enunciations there are many other parts to be considered by the logician, causing him many difficulties.

But a doubt arises against Aristotle's point, for many enunciations are formed without a name, such as 'I run', or 'The one reading is sitting', or 'To cut is to act'. It seems to me that to this we have to reply that the logician takes all words that can as such be the subject of a categorical proposition to function in the capacity of names, and takes all those to function in the capacity of verbs that either are or imply the copula in a categorical proposition. And thus in the aforementioned enunciations the pronoun, the participle, and the infinitive, even taken significatively, should be regarded by the logician as names.

But against this solution there arises an even greater doubt than before, for the definition of name does not apply to participles and infinitives, whereas the definition of verb obviously does; so the logician should classify them as verbs, rather than as names. To this I reply that there is one notable difference between a participle and an infinitive, on one hand, and the verb that is the copula joining the predicate to the subject on the other, namely, that the copula always consignifies a certain time absolutely determined to the present, past, or future, but a participle or an infinitive, although it consignifies time, does not have this [time] determined absolutely to the present, past, or future, but relatively to the copula. For example, 'Aristotle was reading and then he wanted to dispute'; here the words 'reading' and 'to dispute' do not consignify the present time absolutely, but a time that was present then, namely, the time designated by the verbs 'was' and 'wanted', and this is a time far removed from the present. Indeed, the proposition 'Aristotle was going to be generated' is true; for the phrase 'going to be generated' is not absolutely [indicative] of a future time in this proposition, but with respect to the verb

'was', whence the time that then was future is now past. Thus we shall say that it is the definition of the name, and not the definition of the verb, that according to the logician applies to participles and infinitives, it being understood that a name signifies without time, i.e., 'without a time absolutely determined to the present, past, or future' and that a verb [signifies] with time, i.e., 'with a time absolutely determined to the present, past or future'.

1.2.3 On expressions

(1) An expression is a conventionally significative utterance the parts of which signify something separately. Here the whole phrase 'the parts of which signify something separately' is provided so as to exclude the name and the verb, and the other parts are given for the same reason as they were given in the definition of the name and the verb. (2) Some expressions are complete, some incomplete. A complete expression is one that generates complete sense in the soul of the listener, as for example, 'A man runs'. An incomplete expression is one that generates incomplete sense in the soul of the listener, as for example, 'white man'. Some complete expressions are indicative, e.g., 'A man runs', some are imperative, e.g., 'Light the fire!', some are optative, e.g., 'I wish I were a good cleric', and some are subjunctive, e.g., 'If you were to come to me, I would give you a horse'. (3) But of all of these only the indicative expression is called a proposition.

The third part contains three sections. The first provides the definition of expression, and its explanation, the whole of which is clear from the foregoing. The second section presents a division of expressions into complete and incomplete, and yet another division according to the modes of signification of verbs commonly distinguished by grammarians, those modes, i.e., that are properly called 'moods', and in this sense they could as well be divided according to other modes of signification of verbs, such as tense, person, or number. But for the present I leave these considerations to the grammarians.

The third section, however, says that of complete expressions only the indicative is a proposition. Now I do not think this is true, taking 'proposition' in the sense of 'enunciation', or even taking it strictly, insofar as it is distinguished from 'conclusion' or 'question'; of these differences, however, more will be said later. Now, then, it is obvious that not only an indicative expression is a proposition or an enunciation. For every true or false expression is an

enunciation, as is clear from bk. 1 of *On Interpretation,*[40] and if it is a premise for the inference of a conclusion, it is properly called a 'proposition', being, as it were, what is posited for inferring something else. Now it is certainly true that some propositions in the subjunctive mood are obviously true or false and that they can be premises or conclusions in a formally valid syllogism; e.g., 'If every man were to move, no man would be at rest; and if every man were to run, then every man would move; therefore, if every man were to run, then no man would be at rest'.

1.3 Chapter 3: On propositions

1.3.1 The description of proposition

A proposition is an expression that signifies something true or false.

The third chapter is about propositions and their divisions with respect to substance, quantity, and quality. It contains seven principal parts. The first gives the description of *proposition,* the second is the division of propositions into *categorical* and *hypothetical,*[41] the third provides the definition of *subject* and *predicate,* which are the parts of categorical propositions, the fourth is a division of categorical propositions with respect to their *substance,* the fifth is a division of categorical propositions with respect to their *quantity,* the sixth is

40. Ibid., 1.17a3.

41. As we shall see, Buridan's notion of a hypothetical proposition, in line with medieval logical terminology in general, is broader than our understanding of a hypothetical or conditional proposition. Buridan's notion covers not only conditionals (i.e., compound propositions the clauses of which are connected with 'if . . . , then'), but also conjunctions (the clauses of which are connected with 'and') and disjunctions (the clauses of which are connected with 'or' or 'either . . . or'), and in general all compound propositions that in contemporary logic we would call 'molecular' as opposed to 'atomic'. Nevertheless, it would still not be correct to translate Buridan's hypothetica with 'molecular', first, because the contrasted contemporary notion of 'atomic' is not the same as the Buridan's notion of a categorical proposition (e.g., 'Every tall and unmarried man is a rational animal' is a categorical proposition in Buridan's sense, yet it would not be regarded as atomic in contemporary logic), and also because Buridan will explicitly analyze the term's etymology (which of course has nothing to do with 'molecular') in explaining his terminology.

their division with respect to their *quality,* and the seventh is about the interrogatives corresponding to the aforementioned divisions.

The first part describes propositions, saying that a proposition is an expression signifying something true or false. And our author added: 'indicatively', which need not be added, as was said at the end of the previous chapter; whence even Aristotle did not add it.

We should also note that what is defined here is the spoken proposition, for 'expression' is given here as its genus, which previously was defined as a significative utterance, etc. Therefore the author correctly says that it signifies something true or false, for it signifies a mental proposition, which is either true or false. But a mental proposition need not thus signify something true or false: for the mental proposition signifying that God does not exist does not *signify* something false, but *is* false; for nothing more, or less, or anything else, apart from the operation of our souls, is signified by the expression 'God does not exist' than is signified by the expression 'God exists'.[42] But these spoken expressions do signify in the soul the complexive concepts that are added by the second operation of the intellect to the simple and categorematic concepts.

We should note in the third place that 'proposition' is described here insofar as it is used synonymously with 'enunciation', and not insofar as it is distinguished from 'conclusion' and 'question'.

1.3.2 The division of propositions into categorical and hypothetical

(1) Some propositions are categorical, others are hypothetical. (2) A categorical proposition is one that has a subject and a predicate as its principal parts, (3) as for example 'A man runs'; for in this proposition the name 'man' is the subject, 'runs' is the predicate, and what joins the one to the other is the copula. And this is clear by the following analysis: 'A man runs', i.e., 'A man is running'; for here 'man' is the subject, and 'running' is predicated, and the verb 'is' joins the one to the other. (4) And it is called 'categorical' after 'categorizo, -zas,'[43] which is the same as '[I, you] predicate', whence 'categorical' is the same as 'predicative'.

42. See Buridan, *Quaestiones in Aristotelis Metaphysicam,* bk. 4, q. 8, f. 39ra.

43. These are the first two forms (the second should actually be 'categorizeis') of the conjugation paradigm of the Greek verb.

The second part contains four principal sections. The first is the division of propositions into categorical and hypothetical, which will be clear once we see what is a categorical and what is a hypothetical proposition.

The second section describes *categorical proposition,* stating that its principal parts are subject and predicate. And by this it is clear what distinguishes it from a hypothetical, for the principal and major parts of a hypothetical are not subject and predicate, but several propositions, each of which is composed of a subject and a predicate, as we shall see later in more detail.

The third section expounds the above description of categorical proposition, illustrating it by the proposition 'A man runs', in which the name 'man' is the subject and the verb 'runs' is the predicate. Concerning this point we should note, as the author immediately remarks, that the verb is not the predicate, strictly speaking, but it is either the copula joining the predicate to the subject or implies in itself the copula and the predicate together. For the verb 'is' as the third adjacent [*tertium adiacens*] is the copula, and what follows is the predicate. But the verb 'is' occurs as second adjacent [*secundum adiacens*], when I say 'A man is'; but then, like any other verb, it implies in itself the copula with the predicate or with the principal part of the predicate[44]; therefore, to make the subject, predicate, and copula explicit, such a verb has to be analyzed into the verb 'is' as third adjacent, provided that the proposition is assertoric [*de inesse*] and in the present tense [*de praesenti*], and into the participle of that verb, as, for example, 'A man runs' is to be analyzed into 'A man is running', and similarly, 'A man is' into 'A man is a being'.

But then some questions arise. The first concerns what such a copula signifies. The second is whether that copula is a principal part of a categorical proposition. The third question is whether the proposition 'The one lecturing and disputing is a master or a bachelor' is categorical or hypothetical; for it seems that it is hypothetical, since it has two subjects and two predicates. The fourth question is the same concerning the proposition 'A man who is white is colored'; for it seems that it is hypothetical, since here we have two subjects, two predicates, and two copulas, and also because it seems to be equivalent to 'A man is colored, who is white',[45] which is apparently hypothetical.

44. For example, in *Homo videt asinum* (A man sees a donkey), which is to be analyzed as *Homo est videns asinum* (A man is someone seeing a donkey), the whole predicate is *videns asinum* (someone seeing a donkey), of which the verb implies only the principal part, namely, the participle. Likewise, in *Homo est* (A man is), the verb implies the corresponding participle *ens* (being) and the copula, whence this sentence needs to be analyzed as *Homo est ens* (A man is a being).

45. The sentence *Homo qui est albus est coloratus* is compared here with *Homo est coloratus qui est albus.* The difference in word order, as Buridan will interpret it here, expresses the familiar

To the first question we should reply that a spoken proposition has to signify a mental proposition, as was said above. A mental proposition, however, involves a combination of concepts [*complexio conceptuum*], and so it presupposes in the mind some simple concepts, to which it adds a complexive concept, by means of which the intellect affirms or denies one of those [presupposed simple] concepts of the other. Thus, those presupposed concepts are the subject and the predicate in a mental proposition, and they are called the matter of the mental proposition, for they are presupposed by the common form of a proposition, just as matter is presupposed by the substantial form in [the process of] generation. And then it is clear that the subject and the predicate of the spoken proposition signify in the mind the subject and the predicate of the mental proposition. The copula 'is' signifies an affirmative complexive concept, whereas the copula 'is not' signifies a negative complexive concept; and the intellect is unable to form that complexive concept except when it has formed those which are the subject and the predicate, for it is impossible to have the combination [*complexio*] of the predicate with the subject without the predicate and the subject. And this is what Aristotle meant when he said that 'is' signifies a certain composition that cannot be understood without the components.[46]

To the second question we should reply that the copula is truly a principal part of the proposition, because without it there could not be a categorical proposition; and also because it can be compared to a form of the subject and the predicate, and the form is a principal part of a composite. Therefore, they correctly supplemented the second section who said that a categorical proposition is one that has a subject, a predicate, and a copula as its principal parts.

To the third question we should reply that that proposition is categorical, for it does not contain two categoricals, as there is only one copula here; neither are there several subjects, nor several predicates here, for the whole phrase 'the one lecturing and disputing' is a single subject, although hypothetical, namely, conjunctive, and the whole phrase 'master or bachelor' is similarly a single predicate, although disjunctive.

To the fourth question we should reply that there is one predicate here, namely, 'colored', which by the mediation of the copula is predicated of the whole of the rest as of its subject, namely, of the whole phrase 'man who is white'; for the whole phrase 'who is white' functions as a determination of the subject 'man'. And the case is not similar to 'A man is colored, who is white',[47]

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distinction between nonrestrictive and restrictive relative clauses, appropriately expressed in written English by adding or omitting commas, respectively.

46. Aristotle, *On Interpretation* 1.16b24.

47. *Homo est coloratus qui est albus.* See n. 45 above.

for there are two separate predicates here, which are predicated separately of their two subjects, and there is not a predicate here that would be predicated by the mediation of one copula of the whole of the rest. And although these [propositions] are equivalent, they are not equivalent if we add a universal sign. For positing the case that every white man runs and there are many others who do not run, the proposition 'Every man who is white runs' is true and is equivalent to 'Every white man runs'; but the proposition 'Every man, who is white, runs' is false, for it is equivalent to 'Every man runs and he is white'.

The fourth section explains that when a proposition is said to be 'categorical', then that means 'predicative'. And it is called 'predicative' because the predicate is one of the principal and major parts into which a categorical proposition is immediately divided, and this is not the case with a hypothetical.

1.3.3 On subject and predicate

A subject is that of which something is said; a predicate is that which is said of something else, namely, of the subject.

The third part is the definition of subject and predicate, which are predicated correlatively to each other, whence they are defined in terms of each other, just as Porphyry says has to be the case with regard to genus and species; how this should be understood is to be explained in connection with the Categories or bk. 9 of the *Metaphysics*.[48]

But we should realize that concerning the subjects and predicates of propositions several questions arise. For there is first the difficult question that concerns propositions in which there is a conjunctive or disjunctive term before the verb: what should we deem to be the subject in a proposition such as 'Every man or donkey runs'? The second [similar question] concerns propositions with two 'is'-es and the pronoun 'who', such as 'Every man who walks moves' [i.e., 'Every man who is walking is moving']. The third is about propositions in which there is an oblique term before the verb, as [in the proposition] 'Every-man's donkey runs' [i.e., 'Of every man a donkey runs'][49] or

48. Aristotle, *Categories* 5.2b18; Buridan, *Quaestiones in Aristotelis Metaphysicam,* bk. 9, q. 1; see bk. 5, q. 5.

49. *Cuiuslibet hominis asinus currit.* Here, and below, the hyphen in the translation indicates that the universal sign (determiner) is construed with 'man's' alone rather than with the

'Every horse a man is seeing' [*Omnem equum homo est videns,* i.e., 'Every horse is seen by some man or another'].[50] The fourth question is whether the negations and signs of quantity placed before or after the verb are integral parts of the subjects or the predicates.

To the first question it appears to me that it should be replied that in the proposition 'Every man or donkey runs' the whole phrase 'man or donkey' is the subject, and in the proposition 'Every man and donkey runs' the whole phrase 'man and donkey' is the subject, for it is of this whole phrase that the predicate 'running' is predicated by the mediation of the copula 'is'; therefore, it is to this whole phrase that the definition of 'subject' applies.

But then someone may ask about the quantity of this proposition and about what it is that is distributed[51] here. To this I reply that such a proposition needs to have its senses distinguished with respect to composition and division. For if between the term 'man' and the term 'donkey' there is a sign of division, such as a comma [in writing] or a pause [in speech], as in 'Every man, or [a] donkey runs',[52] then the proposition is divided, and its sense is what everyone

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whole phrase 'man's donkey'. This construction is indicated in the Latin by a case agreement that is unavailable in English: hence the need for this artificial device. In fact, the sense of this Latin sentence would be more naturally rendered by 'Of every man a donkey runs', but this rendering would make rather difficult to follow some of Buridan's further syntactic and semantic considerations. For ease of reading, therefore, I give first the "artificial" rendering and then, in square brackets, the more "natural" translation.

50. Obviously, the sentence 'Every horse a man is seeing' must not be confused with 'A man sees every horse'. The latter has a clearly different import than the bracketed passive construction, 'Every horse is seen by some man or another', which can be true even if no man sees every horse, and which expresses the sense conveyed by the somewhat clumsy active construction 'Every horse a man is seeing'. The reason why the passive construction cannot be used in the translation, however, is that in the passive construction the term 'horse' is the subject, whereas Buridan's important syntactical point will be that in the active construction the term 'horse' has to be the direct object of the participle of the predicate term, whence 'horse' in the active construction has to be construed as a part of the predicate, despite the fact that it precedes the copula. See 1.3.3. n. 59.

51. A term is said to be distributed if it has universal import, i.e., if it can be replaced in a conjunction by the names of singulars falling under it, preserving the truth of the original proposition. For example, if 'Every man runs' is true, then it is also true that this man runs and that man runs, etc., pointing to every man. For more on this see 4.3.6.

52. *Omnis homo, vel asinus currit.* Since Latin lacks articles, the indefinite articles demanded by English syntax are added in square brackets where their addition may affect Buridan's point. In this case, the divided sense that is indicated in Latin only by a sign of division in English is also indicated by the need of adding the indefinite article to the second nominal disjunct.

concedes sometimes, namely, 'Every man is he who, or a donkey runs';[53] alternatively, its sense may be expressed by a hypothetical, namely, 'Every man runs or a donkey runs'. So we should note here that a categorical proposition can often be expounded by a hypothetical, as are the propositions 'Only man is an animal', 'Socrates ceases to run', 'Socrates happens to run', and many others.[54] If, however, there is no sign of division, then the whole phrase 'man or donkey' together is distributed in the sense 'Everything that is either a man or a donkey runs'. And the same goes for the conjunctive subject. The proposition 'Every man and donkey runs', without a sign of division, is equivalent to 'Everything that is a man and donkey runs'; but if a sign of division is added, then it is ungrammatical, just as is the proposition 'Socrates and Plato runs'; for we should say 'Every man, and [a] donkey run'.

But what is the quantity of a proposition such as 'Every man or donkey runs'? I say that if it is composite, then it is absolutely universal, for the whole subject together is distributed. But in the divided sense it is partly universal and partly indefinite, for not the whole subject is distributed, but one part is distributed while the other part remains indefinite. And this is not unacceptable concerning propositions whose subjects are composed of several substantives, whether in the nominative or in any of the oblique cases, as in 'Every-man's donkey runs' [*cuiuslibet hominis asinus currit*—'Of every man a donkey runs'][55] or even in 'A man's every donkey runs' [*hominis quilibet asinus currit*]; for the first is universal with respect to its oblique term and indefinite with respect to its nominative term, while the second is the other way round. The proposition 'Every man's-donkey runs' [*quilibet hominis asinus currit*] is absolutely universal, however, for its total subject is distributed together; and the same goes for the proposition 'Every donkey of a man runs' [*quilibet asinus hominis currit*], for they are equivalent, both with respect to grammaticality, as far as grammar is concerned, and with respect to truth and falsity, as far as logic is concerned.

As to the second question, I believe that in 'Every man who is white runs' the whole phrase 'man who is white' is the subject, 'running' is the predicate,

53. The grammaticality of the corresponding Latin phrase *(Omnis homo est qui vel asinus currit)* is just as dubious as that of this English phrase. Probably this is the reason for Buridan's strangely cautious formulation: "everybody concedes [it] sometimes" (unless the text is corrupt here). For Buridan's detailed criticism of such constructions see 4.2.6, rule 9. Following the suggestion of Jack Zupko, we might also render this construction as 'Every man is someone who runs, or a donkey runs', which would clearly boil down to Buridan's alternative, hypothetical formulation of the divided sense.

54. See 1.3.4 n. 63.

55. See 1.3.3 n. 49.

and the verb 'is' implied in the verb 'runs' is the copula. But I believe that in the proposition 'Every man, who is white, runs'[56] there are two subjects and two predicates and that the proposition is hypothetical, as will explained later.

The third question I discussed amply and explicitly in the *Questions* on bk. 1 of *On Interpretation*,[57] which anyone may consult who wishes to do so. For I believe that in '[A] man's donkey runs' the whole phrase 'man's donkey' is the subject,[58] for it is obviously of this whole phrase that the predicate 'running' is predicated by the mediation of the verb 'is' implied in the verb 'runs'. But in the proposition 'Every horse a man is seeing' I believe that the term 'man' is the subject, the verb 'is' is the copula, and 'horse' is part of the predicate, since the whole phrase 'horse seeing' is the predicate;[59] for 'horse' is construed with 'seeing' to make one extreme of the proposition, and not with 'man'. Nor does it count against this [reply] that the term 'horse' is placed before the verb, for sometimes the whole predicate is placed before the verb, and not only a part of it, as in 'Every man an animal is', or even in 'Every man an animal is not'.[60]

To the fourth question it is commonly replied that negating negations are not integral parts of the subject or the predicate, but they belong to the copula; but negations that do not affect the copula, but only infinitize[61] some terms

56. See ibid.

57. Buridan, *Questiones longe super librum Perihermeneias,* bk. 1, q. 6.

58. The indefinite article, required only by English syntax, is not part of the subject; neither are the other determiners, such as the definite article, or the "quantifier words," i.e., as Buridan would have it, the *signa quantitatis,* the signs of quantity.

59. Buridan's syntactical point (which is quite impossible to bring out by the corresponding English construction alone) is that in *Omnem equum homo est videns* the participle of the transitive verb (*videns,* [someone] seeing) is construed with *equum* (horse) as its direct object, whence it belongs to the predicate *(videns),* despite the fact that it precedes the copula. Perhaps a better approximation of Buridan's point can be brought out in English by the following, rather contrived, construction: 'Every horse a man [or another] is a seer of', in which it is at least clear that 'horse' is to be construed with 'a seer of', and not as the subject. See 1.3.3 n. 50.

60. *Omnis homo animal non est*—'Every man an animal is not'. The import of this sentence is not meant to be the same as that of 'Every man is not an animal', for although the latter is equivalent to 'No man is an animal', the former is equivalent to 'For every man there is an animal that he is not it'. Therefore, whereas the contradictory of 'Every man is not an animal' is 'Some man is an animal', the contradictory of 'Every man an animal is not' is 'Some man every animal is', i.e., 'Some man is such that for every animal he is it', i.e., 'Some man is every animal'.

61. A negating negation is one that negates a whole proposition and thereby renders it negative (as in, say, 'A stone is not an animal', or in 'No stone is an animal'), whereas an infini-

within the subject or the predicate, are indeed integral parts of the subjects and predicates of propositions.

Concerning universal and particular signs it is usually said that when they are placed on the side of the subject, then they are not integral parts of those subjects, as in the proposition 'Every man runs' the term 'man' is the subject, and not the whole phrase 'every man'. Similarly, even if they are placed on the side of the predicate, when the predicate is placed before the copula they are not an integral part of the predicate, as in 'A man every animal is', for otherwise contradictory propositions would not have the same subject and the same predicate, which would be in conflict with this property of contradiction. For the following are contradictory propositions: 'Every man runs' and 'Some man does not run'; 'Every man an animal is not' and 'Some man every animal is'. But if the sign of quantity is placed on the side of the predicate after the copula, then it is an integral part of the predicate, for in order that the contradictories have the same predicate, it is necessary that in forming the contradictory whatever is on the side of the predicate should stay the same. For example, the following are contradictories: 'Every man is every man' and 'Some man is not every man'; so also are the following: 'No man is no man' and 'Some man is no man'.

1.3.4 The division of categorical propositions with respect to substance

(1) Some categorical propositions are assertoric [*de inesse*], some are modal [*de modo, sive modalis*]. (2) An assertoric categorical is one that is about the simple inherence of the predicate in the subject,[62] as, for example, 'A

tizing negation negates only a term of a proposition, thereby rendering the term in question an infinite term (as in, say, 'A stone is a non-animal', or in 'A non-stone is an animal').

62. *Categorica de inesse est illa quae est de simplici inhaerentia subiecti cum praedicato.* In fact, a somewhat more precise translation would be "An assertoric categorical is one which is about the simple inherence of the subject with the predicate," but I think this is just a stylistically different formulation of the point given in the text. In any case, when Buridan talks about 'inherence', we need not take this literally, in the sense of attributing any serious metaphysical import to this claim. In general, Buridan is in the habit of using old terminology and filling it with new content. (The most outstanding example of this is his radically novel usage of 'appellation'. For more on this see the introduction.) The same goes for 'inherence' here, for when he is talking about the simple inherence of the predicate in the subject, he does not

man is an animal', 'That a man runs is possible'. (3) A modal categorical is one that is about the modified inherence of the predicate in the subject, as, for example, 'A man is necessarily an animal' or 'The Antichrist can be a man'. (4) Of assertoric propositions some are about the present, as 'A man is running', some are about the past, as 'A man was running', and some are about the future, as 'A man will be running'.

The fourth part has four sections. The first contains a division of categorical propositions with respect to their substance, i.e., with respect to their more formal part, namely, the copula, and this will be clear from the subsequent sections.

The second section describes assertoric categorical propositions. And 'assertoric' is taken here broadly, insofar as it covers also propositions about the

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mean to say, in contrast to his "inherentist" predecessors, that the proposition in which such a predication occurs expresses that the form signified by the predicate inheres in the thing(s) supposited for by the subject. See text at 2.1.2 n. 6. For, as far as he is concerned, the predicate does not possess the function of signifying inherent forms of the subject (see, again, the introduction). On the contrary, in *Homo est animal,* e.g., the predicate has the function of signifying and hence suppositing for animals, and what makes the proposition true is the fact that the supposita of the subject, namely, individual humans, are identical with individual animals. Therefore, the terminology of 'simple inherence' [*simplex inhaerentia*] is used by him only to distinguish what in modern logic we would call 'assertoric propositions' from modal propositions. Note, however, that Buridan also uses the terminology of *propositiones de inesse* [literally, 'propositions about being in', or 'propositions about inherence'] to refer to assertoric propositions, which again echoes the old inherence theory, even though in his usage this terminology has no metaphysical significance. But related to this phrase he occasionally also uses the terminology of *propositiones de fuisse* (literally, propositions about having been) and *propositiones de futurum esse,* or *de fore* (literally, propositions about future being), which merely serve for him to distinguish assertoric propositions of different tenses. As he is about to note, sometimes he uses *de inesse* broadly, to cover all assertoric propositions, regardless of their tense, in which case it will be translated simply as 'assertoric'. Sometimes, however, he uses it more strictly, to distinguish assertoric propositions in the present tense from modal propositions as well as from assertoric propositions in the other tenses. In such cases, therefore, *de inesse* will be translated as 'about actuality' (occasionally 'about present inherence'), as opposed to 'about the past' (occasionally 'about past inherence or actuality') or 'about the future' (occasionally 'about future inherence or actuality'). See 1.8.2 n. 104 and *Sophismata* n. 1. The reason for this solution (instead of simply talking about tenses) is that the system of grammatical tenses of Latin is rather different from that of English. Therefore, I will have to use these phrases to indicate the temporal connotations of the verbs and participles of propositions relative to a given present time, rather than talking about their tenses. When no confusion may arise from the use of the term 'tense', however, I will still use it to translate phrases such as *verbum futuri (praeteriti) temporis* (verb in the future [past] tense).

future and the past; for this is how an assertoric proposition is distinguished from a modal proposition. An assertoric proposition is one in which the predicate is simply and without modification enunciated of the subject, as in 'A man is running'.

The third section describes modal propositions, saying that a modal proposition is one in which the predicate is denoted to be in [*inesse*] the subject, not absolutely, however, but rather with some modification and determination, such as when the predicate is in the subject possibly, contingently, or necessarily. And of these more will be said in the eighth chapter.

The fourth section subdivides assertoric propositions with respect to their copula. For some have a present-tense copula, and those are called propositions about the present [*de praesenti*], as, for example, 'A man is running', 'A man is dead'; some have a past-tense copula, and those are called propositions about the past [*de praeterito*], as, for example, 'A man was white', 'A man ran', or 'A man was running'; and some have a future-tense copula, and those are called propositions about the future [*de futuro*], as, for example, 'A man will be dead', 'A man will run', i.e., 'A man will be running'.

Concerning the fourth section we should note that sometimes the copulas in categorical propositions are composed of several copulas, conjunctively or disjunctively, and then such propositions are not absolutely about the present, past, or future, nor are they modal propositions, absolutely speaking, but are rather hypothetical. For example, some have assertoric hypothetical copulas, as does 'B is or was A' or 'B is or will be A', and a proposition like this is about the present and past disjunctively, or about the present and future disjunctively; some have hypothetical modal copulas, as do propositions about contingency;[63] some have assertoric and modal copulas together, as does 'B is or can be A', and a proposition like this is neither absolutely modal, nor absolutely assertoric, but is about actuality [*de inesse*] and about possibility [*de possibili*], disjunctively.[64] Further, such propositions are categorical because of the unity of the subject and the unity of the predicate, and they do not have hypothetical extremes, but both their extremes are absolutely categorical, although their copulas are hypothetical.

63. This is because the proposition 'A is contingently B' or, alternatively, 'A happens to be B' [*A contingit esse B*] is analyzed as 'A is able to be and is able not to be B' or, alternatively, 'A can be B and can not-be B' [*A possibile est esse B et possibile est non esse B or A potest esse B et potest non esse B*]. For more on this point and the relevant terminology see the next note.

64. For the terminology of 'proposition about possibility' as opposed to 'possible proposition,' and so on, see the introduction. See 5.7.2 n. 42.

1.3.5 The division of categorical propositions with respect to quantity

(1) Some categorical propositions are universal, some are particular, some are indefinite, and some are singular. (2) A universal proposition is one in which a common subject term is determined by a universal sign, as for example 'Every man runs'. (3) A common term is one that is aptly predicated of many things, as 'man' of Socrates and Plato. (4) Universal signs are 'every', 'no', 'nothing', 'whichever', 'both', 'neither', and the like. (5) A particular proposition is one in which a common subject term is determined by a particular sign, as for example 'Some man runs'. (6) Particular signs are 'some', 'someone', 'another', 'the rest', and the like. (7) An indefinite proposition is one in which the subject is a common term without a sign [of quantity]. (8) A singular proposition is one in which a discrete, i.e., singular term, or a common term with a demonstrative pronoun, is the subject, as for example 'Socrates runs' or 'This man runs'. (9) A singular term is one that is aptly predicated only of one thing, as 'Socrates' or 'Plato'.

The fifth part contains nine brief sections. The first provides a division of categorical propositions with respect to their quantity, which will be obvious on the basis of the subsequent sections.

The second section provides the definition of the universal proposition, concerning which some doubt arises, for the proposition 'Not [a] man runs' does not have a universal sign, nor does the proposition 'Nobody runs'; but they are both universal propositions. On the other hand, the propositions 'Not every man runs' and 'Not no man runs' do have universal signs, and yet they are not universal but particular.

To this it is replied that the word 'not' or its equivalents, if it is negating, affecting the copula, placed before a common term that is not otherwise distributed, will distribute the common term, whence it is equivalent to a universal negative sign. Therefore, the proposition 'Not [a] man runs' [*Non homo currit*] is universal, if the negation is negating, i.e., one affecting the copula; and similarly, the proposition 'Nobody runs' is universal, for the negation implicit in 'nobody' is a negating negation, according to the common usage of the word 'nobody'. But the proposition '[A] non-man runs' [*Non homo currit*] would be indefinite, if the word 'non' merely infinitized the term 'man'. In a similar manner, we should say that a negation affecting the copula placed before a distributive sign eliminates its distribution and renders the proposition particular. Therefore the propositions 'Not every man runs' and 'Not no man runs' are particular, because the [universal] signs are rendered particular, as

it were.[65] Thus, a more evident description of a universal proposition would be the following: 'a universal proposition is one whose subject is a distributed common term'.

The third section describes common terms, whence it belongs to the treatise on predicables.

The fourth section lists examples of universal signs, among which it also enumerates the name 'nothing', which, however, in truth is not a distributive sign but rather implies a categorematic term with a negating negation; for 'Nothing runs' is equivalent to 'No being runs' or 'No thing runs'.

The fifth section is a description of particular propositions, and it is clear, if we call a universal sign with a negating negation placed before it a 'particular sign'; for in this way the propositions 'Not every man runs' and 'Not no man runs' are particular, as was said above.[66]

The sixth section lists examples of particular signs. And we should know that the names 'something', 'someone', 'everything', 'whatever' and the like, substantivated in the neuter gender,[67] are not just signs, but they also involve within themselves categorematic terms along with the signs; for they are analyzed in the following manner: 'something', i.e., 'some thing'; 'nothing', i.e., 'no thing', 'everything', i.e., 'every thing', 'anything', i.e., 'any thing'.

The seventh section is the definition of indefinite propositions, and it is obvious, except for what was said earlier, namely, that a proposition with a complex subject term is sometimes partially universal and partially indefinite or particular; thus the proposition 'Every-man's donkey runs' ['Of every man a donkey runs'][68] is universal with respect to the oblique term and indefinite with respect to the nominative, while the situation with the proposition 'A man's every donkey runs' is the reverse. And if you ask whether such a proposition should be called a universal rather than an indefinite or conversely, I respond that it should rather be denominated in accordance with the nominative, as we usually denominate something on account of its more principal part; therefore the first will be called indefinite with a universal oblique term, and the second will be called a universal with an indefinite oblique term; but neither is absolutely universal or absolutely indefinite.

65. Buridan here simply formulates the well-known theorems of quantification theory: $\sim(\forall x)(Fx) \leftrightarrow (\exists x)\sim(Fx)$ and $\sim\sim(\exists x)(Fx) \leftrightarrow (\exists x)(Fx)$.

66. See p. 32.

67. *Substantivata in neutro genere.* "Substantivated" indicates that something that is grammatically not a substantive, say, an adjective or a pronoun, functions as a substantive, i.e., functions in itself as a subject in a proposition, which, according to Buridan, such parts of speech can do only in the neuter gender in Latin. See 1.2.1 n. 36.

68. See 1.3.3 n. 49.

The eighth section is a description of singular propositions, and perhaps it would have been sufficient to say that a singular proposition is one whose subject is a singular term, without any further addition. For according to Porphyry an aggregate of a common term and a demonstrative pronoun is a singular term, as are 'this white [thing]' and 'this [thing] approaching'.

The ninth and final section is a description of singular terms, which should be further clarified in the treatise on predicables.

1.3.6 The division of propositions with respect to quality

> Again, some propositions are affirmative, and some are negative; an affirmative proposition is one in which the predicate is affirmed of the subject, as for example 'A man runs', and a negative proposition is one in which the predicate is denied of the subject, as in 'A man does not run'.

The sixth part classifies categorical propositions with respect to their quality and is clear enough if we note that the word 'not', either in its explicit form or when implied in some [other] term, is usually called 'negation'. Thus the term 'negation' is equivocal, for sometimes it is taken for a whole negative proposition, and sometimes for the word 'not'. Since, therefore, the formal part of a proposition is the verbal copula, if the negation, i.e., the word 'not' affects the copula, then the proposition is called 'negative'; otherwise it is called 'affirmative'.

Now while we are on this point we should note that a negation does not affect anything that precedes it. Therefore, a proposition can be negative only if the negation precedes the verb, which is either the copula or involves within it the copula. But if the negation immediately precedes the copula, then it always renders the proposition negative, as in 'A man does not run', and if it precedes the whole proposition, as in *Non homo currit*[69], then it is either under-

69. Because of the lack of articles in Latin, this Latin sentence exhibits an ambiguity that English syntax immediately eliminates by its requiring the insertion of an indefinite article construed with the subject term. If the article precedes the negation, as in 'A non-man runs', then the negation has to be understood as affecting the term only; if, however, the negation precedes the article, as in 'Not a man runs', i.e., 'It is not the case that a man runs', then the proposition is negated, just as Buridan explains.

stood to affect only the subject term and infinitize it, and then the proposition is affirmative with an infinite subject term and is equivalent to 'Something that is not a man runs', or the negation is understood to affect the whole proposition, and consequently the copula too, and then it renders the proposition negative and distributes the predicate and the subject, whence it is equivalent to 'No man runs' and even to 'Every man does not run'.

But then you ask: 'Which of the two senses described should the proposition *Non homo currit* have in virtue of its proper meaning [*de virtute sermonis*]? Should it be said to be an affirmative or a negative proposition?' I reply that in the proper sense the negation affects everything that follows it if the utterance is continuous; therefore in the proper sense this proposition is negative. But on the basis of the speaker's intention, or of the disputants' agreement, or on account of a sign of division, or a pause between [uttering] *non homo* and *currit,* the proposition should be conceded to be affirmative with an infinite subject.

1.3.7 The questions asking about the divisions of propositions

> Now that we have divided propositions in three ways, we should realize that there are three interrogatives in terms of which we can raise questions about a proposition as such, namely, 'What [kind of a proposition is it]?' [*quae*], '[Of what] quality [is it]?' [*qualis*], and '[Of what] quantity [is it]?' [*quanta*]. The question *quae* asks about the nature [*substantia*] of a proposition, whence the reply should be 'categorical' or 'hypothetical'. The question *qualis* asks about its quality, so the reply should be either 'affirmative' or 'negative'. And the question *quanta* asks about its quantity, so the reply should be 'universal' or 'particular' or 'indefinite' or 'singular'. Hence derives the mnemonic verse: *quae—ca vel hyp, qualis—ne vel aff, u quanta—par in sin.*

This final part is entirely clear, if we explain the verse in the following manner: to the question *quae* the reply is *ca* or *hyp,* i.e., 'categorical' or 'hypothetical'; to the question *qualis* the reply is *ne* or *aff,* i.e., 'negative' or 'affirmative'; to the question *quanta* the reply is *u,* i.e., 'universal', *par,* i.e., 'particular', *in,* i.e., 'indefinite', or *sin,* i.e., 'singular'.

1.4 Chapter 4: On the opposition of categorical propositions

1.4.1 On pairs of propositions that share some of their terms

(1) Some categorical propositions share both their terms, e.g., 'A man is an animal' and 'A man is not an animal'; some share only one, e.g., 'A man runs' and 'A man disputes'; and some share none, e.g., 'A man runs' and 'An animal moves'. (2) Of propositions sharing both their terms some share them in the same order, e.g., 'A man runs' and 'A man does not run', whereas some do so in the reverse order, e.g., 'A man is an animal' and 'An animal is a man'.

The fourth chapter is usually called 'On the opposition of categorical propositions', but alternatively we can say that this chapter is about the relationships of propositions having in common the same subjects and predicates. It contains four principal parts: the first sets forth two divisions in order to exclude propositions not considered here; the second divides the propositions considered here into contraries, subcontraries, contradictories, and subalterns; the third distinguishes three sorts of matter of propositions, and the fourth presents the laws of contraries, subcontraries, contradictories, and subalterns.

The first part contains two divisions, the first of which is obvious, if by 'terms' one understands the subjects and predicates of propositions, and if when two propositions are said to share the same terms one understands that one has the same or similar terms as the other, whereas by their 'sharing no terms' one understands that neither of them has a similar term as the other, and by 'sharing only one term' one understands that they have one term similar, but not the other. Now the author intends to consider here only propositions sharing both their terms.

The second division is also clear if by 'in the same order' we understand that both propositions have the same term as the subject and the same term as the predicate, and by 'in reverse order' we understand that the subject of the one is the predicate of the other, and vice versa. And in this chapter the author intends to consider only those that share both their terms in the same order, but those sharing their terms in the reverse order will be discussed later.

1.4.2 The square of opposition

> (1) Again, of propositions sharing both their terms in the same order, some are contraries, some are subcontraries, some contradictories, and some subalterns. (2) Contraries are a universal affirmative and a universal negative sharing the same subject and predicate, e.g., 'Every man runs' and 'No man runs'. (3) Subcontraries are a particular affirmative and a particular negative, e.g., 'Some man runs' and 'Some man does not run'. (4) Contradictories are a universal affirmative and a particular negative, such as 'Every man runs' and 'Some man does not run', or a universal negative and a particular affirmative, such as 'No man runs' and 'Some man runs'. (5) Subalterns are a universal affirmative and a particular affirmative, e.g., 'Every man runs' and 'Some man runs', or a universal negative and a particular negative, as for example 'No man runs' and 'Some man does not run'. (6) All this is clear in [figure 4]:

In the second part there are six sections: the first presents a four-member division, the next four provide descriptions of those four members, and the sixth involves the construction of a figure.

As to the first section, we should note that this division constitutes an exhaustive division of nonequivalent propositions sharing both their terms in the same order. For, necessarily, given two propositions, and provided they have the same, i.e., similar, subjects and predicates, then they either have singular or universal subject terms. If they have singular subjects, then both are singular, and they are contradictories if they are of diverse quality; therefore, in the description of contradictories it has to be added that contradictories involve both a universal affirmative and a particular negative, or both a universal negative and a particular affirmative, or both a singular affirmative and a singular negative. If, however, those two propositions have common [terms as their] subjects, then either of these has to be either universal, particular, or indefinite; but indefinites have to be judged in the same way with respect to truth and falsity and with respect to oppositions and consequences as particulars; therefore it was enough to speak about particulars, treating indefinites as particulars. If, then, the propositions have common [terms as their] subjects, then both are universal, or both are particular, or one of them is universal and the other is particular. If both are universal and of the same quality, then they are equivalent, and if they are of diverse quality, namely, the one is affirmative and the other is negative, then they are contraries. Similarly, if they are both particular and of the same quality, then they are equivalent, and if they are of diverse quality, then they are subcontraries. If, however, one of them is universal and the other is particular, then they are either of the same quality,

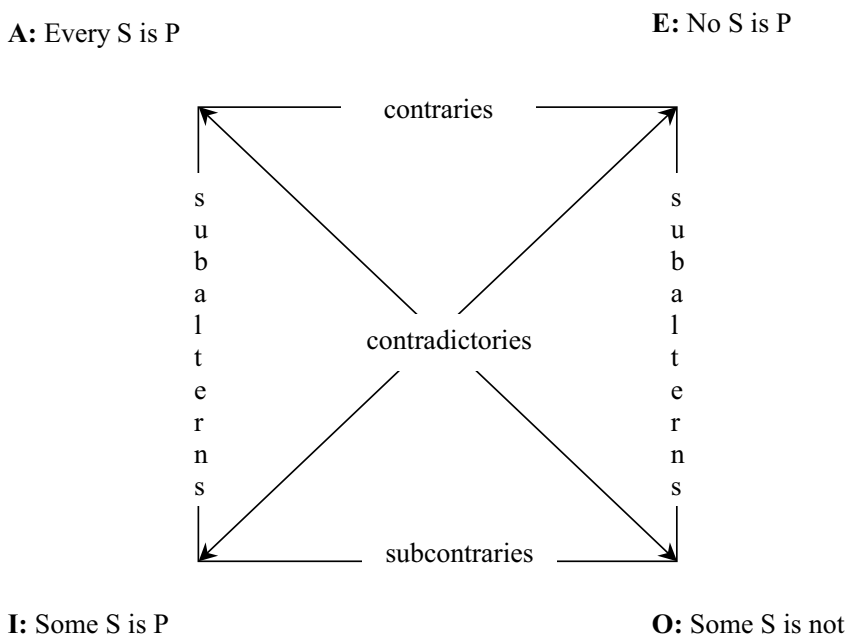


Fig. 4. The Square of Opposition

and then they are subalterns, or they are of diverse quality, and then they are contradictories.

But it is asked what the contradictory of 'Every-man's donkey runs' ['Of every man a donkey runs'][70] is. And at first sight it seems that its contradictory is 'Some man's donkey does not run'. But both can be true at the same time, namely, positing the case in which every man has two donkeys, one running and another not running.

Solution: I reply that these are not contradictories, as has been correctly argued, for the latter is particular, absolutely speaking, namely, both in its nominative and in its oblique term, whereas the former is not absolutely universal, but only in its oblique term. We should therefore formulate a rule for contradiction, namely, that every term, whether nominative or oblique, that is taken in one [of two contradictory propositions] universally—that is, distributively—has to be taken in the other particularly or indefinitely—i.e., determinately—and conversely. Therefore the following are contradictories: 'Every-man's donkey runs' and 'Some man's no donkey runs'; and so are these two: 'Every man's every donkey runs' and 'A man's donkey does not run'; and thus, the contradictory of 'Of every contradiction one member is true' is 'Of

70. See 1.3.3 n. 49.

some contradiction neither member is true', and similarly, the contradictory of 'Every man an animal is not' is 'Some man every animal is'.[71]

Similarly, it is asked whether 'Every-man's donkey runs' and 'No-man's donkey runs' [i.e., 'Of no man a donkey runs'] are contraries. And I reply that they are indeed contraries, in that they satisfy the law of contraries, whence in a broad sense they are contraries; for they can be false at the same time, but they cannot be true at the same time. But in the strictest sense they are not contraries, for, strictly speaking, contraries have to be maximally distant, as is clear from bk. 10 of the *Metaphysics;*[72] they should therefore be maximally distant with respect to all the supposita, namely, they should be such that one should affirm something of all, and the other should deny [the same] of all, universally. (Now a contradiction does not do this; therefore a contradiction does not exhibit maximal distance but rather no distance at all, for a contradiction has no intermediate [*medium*]).[73] But in the previous case, although these propositions are maximally distant with respect to the supposita of 'man', they are not maximally distant with respect to the supposita of 'donkey'. But the following would be maximally distant, strict contraries: 'Every-man's every donkey runs' ['Of every man every donkey runs'] and 'No-man's [any] donkey runs' ['Of no man does any donkey run'].

1.4.3 On the matter of propositions

(1) Propositions have three kinds of matter, namely, natural, contingent, and remote. (2) Natural matter is that in which the predicate belongs to

71. That is to say, "the contradictory of 'Every man is such that some animal is not identical with him' is 'Some man is such that every animal is identical with him'." See 5.1.8 n. 15.

72. Aristotle, *Metaphysics* X.4.1055a17.

73. A contradiction does not have to affirm and deny the same of the same thing. Rather, whatever the affirmation posits is totally taken away by the contradictory negation; this is why a negative can be true even if its subject term supposits for nothing. For more on this see the introduction. An intermediate [*medium*] of contraries is what neither of them is, namely, what results from the contradictory negation of both (but which, strictly speaking, falls under the same proximate genus with them). For example, if 'black' and 'white' are contraries, then their *intermediate* is what is 'neither black nor white' (but which falls under the genus of 'color', since, e.g., a sound is neither black nor white, yet it is not their intermediate, since it is not a color). In an analogous manner, the intermediate of 'Every man runs' and 'No man runs' is 'Not every man runs and not no man runs', i.e., 'Some man does not run and some man runs'. But of 'Every man runs' and 'Some man does not run' there is no such an intermediate, for the negation of both would only yield the same pair of contradictories.

the essence of the subject or is its property [*proprium*], as in 'Man is an animal' or 'Man is risible'. (3) Contingent matter is that in which the predicate may or may not belong to the subject, as in 'A man is white'. (4) Remote matter is that in which the predicate cannot belong to the subject, as in 'A man is a donkey'.

The third part contains four sections, namely, a three-member division and the elucidation of each member.

As to the first section we should note that by the 'matter' of categorical propositions we should understand the subject and the predicate, as was said earlier, whereas the formal part was said to be the copula.

The second section therefore has to be expounded in such a manner that a proposition is in natural matter if it is *per se* true, whether in the first or in the second sense of *per se*.[74] So the author intends the first sense of *per se* when he says 'in which the predicate belongs to the essence of the subject'; however, he intends the second sense when he says 'or is its property'.

The third section is expounded in such a manner that a proposition is said to be in contingent matter if the proposition is contingent and not *per se* true, even assuming the constancy of terms;[75] and this is what the author meant by 'may or may not belong'. Deciding whether a proposition is *per se* or *per accidens* true pertains to the *Posterior Analytics;* and since it was conceded there that every necessary proposition is *per se,* and every contingent is *per accidens,* it follows that every necessary proposition is in natural matter and every possible but not necessary proposition is in contingent matter; and then, from the fourth section it is clear that every impossible proposition is in remote matter.

All of the foregoing concerns affirmative propositions. Affirmative propositions and their negative opposites involve the same terms, and hence are of the same matter. Therefore it is clear that negative impossible propositions are in natural matter, whereas negative necessary propositions are in remote matter and negative contingent propositions are in contingent matter. Further, all these points should be understood as applying only to assertoric categorical propositions; for the proposition 'A man can run' is necessary,[76] although it is in contingent matter, even with the assumption of the constancy of terms.

74. See Aristotle, *Posterior Analytics* I.4.73a35–73b25.

75. The assumption of the constancy of terms is the assumption that they are not empty, i.e., that they actually supposit for something.

76. It is necessary in the sense that whatever is a man necessarily has by nature the ability to run.

1.4.4 The laws of oppositions

(1) The law and nature of contraries is such that if the one is true, then the other is false, but not conversely; for they can both be false in contingent matter, as for example 'Every man is white' and 'No man is white'. (2) The law of subcontraries is such that if one of them is false, then the other is true, but not conversely; for they can both be true in contingent matter, as for example 'Some man runs' and 'Some man does not run'. (3) The law of contradictories is such that if the one is true, then the other is false, and conversely; and in no matter can they both be true or false at the same time. (4) The law of subalterns is such that if the universal is true, then the particular is true, but not conversely; for the particular can be true without the universal being true, but not conversely.

The fourth part obviously has four sections, namely, the law of contraries, the law of subcontraries, the law of contradictories, and the law of subalterns.

As to the first section, we should note that in many books it is added after this section that it is necessary in natural and in remote matter that if the one is true then the other is false and conversely. And this is indeed true of remote matter, for it is always necessary for the affirmative to be false and for the negative to be true. And similarly this is true in natural matter, if the predicate is convertible with the subject, or is more general than it, for then it is necessary that the affirmative be true and the negative be false; but in natural matter, if the subject is more general than the predicate, then it is necessary that both be false, as for example, 'Every animal is a man' and 'No animal is a man'.

Similarly, with respect to the second section, we should say that subcontraries cannot both be true at the same time in remote matter, nor in natural matter, if the predicate is convertible with, or more general than, the subject. But if the subject is more general, then it is necessary that they both be true at the same time, as for example, 'An animal is a man' and 'An animal is not a man'.

From the third section we should infer that even if two propositions appear to be contradictories on the basis of a virtual infinity of instances, while being found in some cases to be both true or false at the same time, then they are not correctly taken to be contradictories, but we should seek out other propositions that contradict them. And such false appearances are to be revealed by the art of fallacies [*per artem sophisticam*].

From the fourth section we infer the rule that from the universal to the particular the consequence is always formally valid, but never conversely. On account of matter, however, there can be a valid consequence from the par-

ticular to the universal, namely, in remote matter, or in natural matter, where the predicate is convertible with or superior to the subject.

1.5 Chapter 5: On the equipollence of propositions

1.5.1 The description of equipollence

Next, we deal with equipollence. Equipollence is usually described as being the equivalence of two propositions in respect of truth or falsity.

The fifth chapter is about the equipollence of propositions. It contains five parts: the first is a description of equipollence, and the other four are four rules of equipollence.

Concerning the first part we should note that some propositions that are not formally equipollent are equipollent on account of their matter; and these are not properly called equipollent, as for example, subalterns in remote matter, or in natural matter, when the subject is not more general than the predicate. But the author intends to discuss only formal equipollence, and then the description should be understood thus: equipollence is the equivalence of two propositions in truth or falsity so that either of them follows from the other by a formal consequence, and so that it is necessary that if they are formed at the same time, then, if the one is true, then so is the other, and if the one is false, the other is false too.

We should also note that two propositions are equipollent only if they share both their terms. They can be equipollent sharing their terms in the same as well as in the reverse order. But the author in this chapter discusses only those that share their terms in the same order. Of those that share their terms in the reverse order we can briefly say that those are equipollent that can be validly converted one with the other, but otherwise they are not.

We should also note concerning these rules of equipollence the following: if there are two terms distributable by different distributions placed in front of the copula, as in propositions with oblique terms in which the oblique term is placed in front of the copula together with the nominative, such as 'A man's donkey runs', or in which the predicate is placed before the copula, as in 'A man an animal is', and similarly in modal propositions containing the modes

'possible', 'impossible', 'necessary', then in combining the equipollence of two such terms together there are two kinds of equipollence to be considered here. For the addition or removal of the negation and the other syncategoremata to or from these terms results in the affirmation and the negation of the proposition, since they precede the copula.

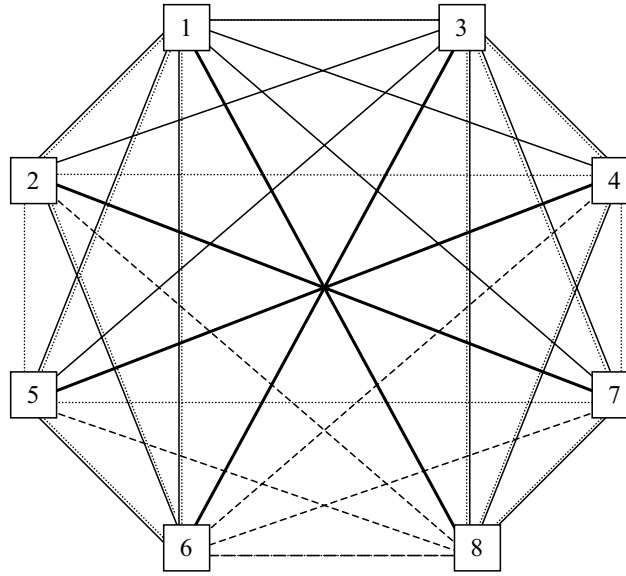
And then from these [combinations] there results a complex figure of eight vertices, and in every vertex there are nine propositions, just as in the figure for modal propositions. And then, consequently, from the eight vertices there result twenty-eight combinations, the oppositions of which have rules entirely similar to those given concerning modal propositions.[77] For in its own way this figure here is similar to the one there, if we match the oblique term before the nominative in the propositions with oblique terms, and the subject term of the propositions of unusual construction with the subject term of modal propositions, and, likewise, if we match the nominative term of the propositions with oblique terms, and the predicate of the propositions of unusual construction, with the mode of modal propositions. In figure 5, the careful observer will clearly see how the propositions with oblique terms distributable independently of their nominatives, or the propositions of unusual construction (namely, those in which the predicate is placed before the copula) sharing both terms in the same order, are related to one another with respect to one or other of the laws of opposition.

1.5.2 The first rule of equipollence

> So in connection with equipollences we give the following rules. First: if [in a proposition] a negation is placed before a sign, be it either a universal or a particular [sign], then it is equipollent to its contradictory. Hence, 'Not every man runs' is equipollent to 'Some man does not run'; and similarly, 'Not no man runs' is equipollent to 'Some man runs'.

We should realize that the rule is not true as here formulated [*de proprietate sermonis*], for no proposition is equipollent to its contradictory. But it is put forth in the true sense to the effect that if a proposition is the contradictory of another, then its combination with a negation placed before it will be

77. A detailed discussion of Buridan's modal diagram is provided by G. E. Hughes, "The Modal Logic of John Buridan," in *Atti del Convegno internazionale di storia della logica: Le teorie delle modalità,* ed. G. Corsi, C. Mangione, and M. Mugnani (Bologna: CLUEB, 1989), pp. 93–111.



1.							
sa	2.						
cr	cr	3.					
cr	dp	sa	4.				
sa	dp	cr	cd	5.			
sa	sa	cd	sc	sa	6.		
cr	cd	sa	dp	dp	sc	7.	
cd	sc	sa	sa	sc	sc	sa	8.

Legend: cd =contradictory; cr=contrary; sc=subcontrary; sa=subaltern; dp=disparate

contradictories: cd(p,q) = p ↔ ~q	(1,8); (2,7); (3,6); (4,5)
contraries: cr(p,q) = p → ~q	(1,3); (1,4); (1,7); (2,3); (3,5)
subcontraries: sc(p,q) = ~p → q	(8,6); (8,5); (8,2); (6,7); (6,4)
subalterns: sa(p,q) = p → q	(1,2); (1;5); (1,6); (2,6); (3,4); (3,7); (3,8), (4,8); (5,6); (7,8)
disparates: dp(p,q) = ~(p ↔ ~q)	(2,4); (2,5); (4,7); (5,7)

Here p and q stand for nonequivalent propositions of the forms listed below.

1.	Every man necessarily runs	Of every man every donkey runs	Every man every runner is
2.	Some man necessarily runs	Of some man every donkey runs	Some man every runner is
3.	Every man necessarily does not run	Of every man every donkey does not run	Every man every runner is not
4.	Some man necessarily does not run	Of some man every donkey does not run	Some man every runner is not
5.	Every man possibly runs	Of every man some donkey runs	Every man some runner is
6.	Some man possibly runs	Of some man some donkey runs	Some man some runner is
7.	Every man possibly does not run	Of every man some donkey does not run	Every man some runner is not
8.	Some man possibly does not run	Of some man some donkey does not run	Some man some runner is not

Translator's note: this reconstruction presents the relationships of all three types of propositions (namely, modals, propositions with oblique terms, and propositions "of unusual construction") that Buridan recognizes as exhibiting the same type of inferential pattern. In the manuscripts and early printed editions we have separate diagrams for these different types of propositions. This summary reconstruction, besides being much simpler than those diagrams, clearly shows why these three types of propositions are treated by Buridan together.

Fig. 5. Buridan's *Magna Figura* of Oppositions

equipollent to the one that was the contradictory of the original, to which the negation was prefixed. And the rule thus corrected is universally true, both concerning categoricals and hypotheticals, whether there is some sign in the proposition or not, for there is no better and more reliable way to form the contradictory of a proposition than by prefixing a negation to it that is understood to be operating on the whole proposition. Indeed, if the negation 'not' were not placed before the proposition, then the previous rule would not be true. For example, the propositions 'A man's every donkey runs' and

'A man's not every donkey runs' are not contradictories, but the propositions 'A man's every donkey runs' and 'Not: a man's every donkey runs' [i.e., 'No man's every donkey runs'] are, provided the negation 'not' is understood to operate on the whole proposition, for if it were understood as operating only on the term 'man', infinitizing it, then the proposition would be affirmative and would not contradict 'A man's every donkey runs'.[78]

We should note therefore that since the same proposition cannot have several contradictories unless they are equipollent, the next rule follows, namely, that for any given proposition, the proposition resulting from its combination with a negation preceding it will be equipollent to every contradictory of the given proposition.

We should also note that negation has the capacity for distributing whatever follows it, if without the negation it would not be distributed, and if it was distributed, then the negation removes the distribution; and what was affirmed it denies, and what was denied it affirms. And so it changes the quality of the proposition, if it precedes the copula, and also changes the quantity of every common term that it precedes. Therefore, since contradictories have to differ in quality and in the quantity of all their common terms, it is obvious that a preceding negation truly yields a contradiction.

1.5.3 The second rule of equipollence

> The second rule is the following: if a negation is placed after a universal sign, then [the resulting proposition] is equipollent to its contrary; therefore the propositions 'Every man does not run' and 'No man runs' are equipollent, just as are the propositions 'No man does not run' and 'Every man runs'.

The reason for this rule is that the negation, since it does not precede the sign, does not remove its universality, but, since it precedes the copula, it changes the quality of the proposition; therefore, those two both remain universal, the one being affirmative and the other negative; and such are contraries.

78. The Latin sentence *Non hominis quilibet asinus currit* is ambiguous between 'It is not the case that a man's every donkey runs'—*Non (hominis quilibet asinus currit)* and 'A non-man's every donkey runs'—*Non (hominis) quilibet asinus currit.* Obviously, what accounts for the difference is the scope of the negation, just as Buridan explains.

1.5.4 The third rule of equipollence

> The third rule runs as follows: if a negation is placed both before and after a sign, be it universal or particular, then it is equipollent to its subaltern, as is 'Not every man does not run' to 'Some man runs', or 'Not no man does not run' to 'Some man does not run', or also 'Not some man does not run' to 'Every man runs'.

Now the reason for this rule is that two negations preceding the copula cancel out each other with respect to the copula, whence they leave the quality of the proposition unchanged. For both 'Every man runs' and 'Not every man does not run' are affirmative, and both 'No man runs' and 'Not no man does not run' are negative. But since then a single negation precedes the sign, it changes the quantity of the proposition. But such are subalterns, namely, those of the same quality, but of diverse quantity, the one being universal and the other particular.

1.5.5 The fourth rule of equipollence

> From these rules there follows a further rule: if two universal negative signs are placed in the same proposition, one on the side of the subject and the other on the side of the predicate, then the first is equipollent to its contrary and the second to its contradictory. Therefore 'Nothing is nothing' is equipollent to 'Anything is something', for, by the second rule, 'Nothing . . . is not . . .' is equivalent to 'Anything', just as 'None . . . is not . . .' is equivalent to 'Everything', and, by the first rule, 'Not nothing' and 'Something' are equipollent. Whence the verse *prae contradic, post contra, prae post que subalter.*

We should note well that the rule is valid if both the subject and the predicate precede the copula, as in 'Nothing nothing is', 'No being no being is', 'No chimera no chimera is'. And the reason for this rule is that when both negations operate on the copula, they cancel out each other with respect to the quality of the proposition; and therefore the proposition stays affirmative. And then, since the second negation does not operate on the first sign, which is on the side of the subject, that subject stays distributed, but since the second negation operates on the second sign, because it precedes it, it thus removes its distribution. Therefore, it is clear that those negative signs can be changed into affirmative ones, and that the first should stay universal, whereas the sec-

ond should become particular, as for example: 'Nothing nothing is; therefore anything something is', and, also conversely, 'Anything something is; therefore, nothing nothing is'. And since indefinites are judged in the same way as particulars, it follows: 'Every man an animal is; therefore, no man no animal is' and conversely.

But if the second negation does not precede the copula, then the rule is not formally valid. For the one is then negative with an infinite predicate, as with 'Nothing is nothing' or 'No chimera is no chimera', and the second then is affirmative with a finite predicate, as for example, 'Anything is something' or 'Every chimera is some chimera', and such are not convertible between themselves, except supposing the constancy of terms. For the proposition 'No chimera is no man' is true, since its contradictory 'Some chimera is no man' is false, for it is an affirmative whose subject supposits for nothing; and the proposition 'Every chimera is some man' is false; therefore this consequence is not valid: 'No chimera is no man; therefore every chimera is some man', for a falsity does not follow from a truth. But the consequence would be valid assuming the constancy of its terms, namely, that each of the terms did in fact supposit for something.

1.6 Chapter 6: On the conversions of propositions

1.6.1 Three kinds of conversion

Propositions sharing both their terms in the reverse order can be converted in three ways, namely, simply, accidentally, and by contraposition.

The sixth chapter is about the conversions of propositions. It contains five parts. The first contains the enumeration of the three kinds of conversion, the second is about simple conversion, the third is about accidental conversion, the fourth is about conversion by contraposition, and the fifth is about certain rules.

Concerning the whole chapter we should note first that Aristotle posits two kinds of conversion. In one way it comes about by changing the quality, but preserving the quantity and the position of the terms of the proposition, and this applies to contingent propositions, which will be discussed later. In the

other way the conversion involves preserving the same quality, but changing the position of terms, so that the subject of the original will be the predicate of the resulting proposition and conversely, for example: 'Some man is an animal; therefore some animal is a man'; now it is this kind of conversion that is intended here.

This kind of conversion, however, is described by some people as follows: 'conversion is changing the subject into predicate and the predicate into the subject preserving truth and falsity'. And this is not entirely correctly formulated, for the following is a valid conversion: 'Every animal is a man; therefore, some man is an animal'; nevertheless, here the antecedent is false, though the consequent is true. Therefore a formal conversion, which is being considered here, is better described thus: *a formal conversion is the formal consequence of two propositions sharing both their terms in reverse order.* And if we wish to extend 'conversion' to cover cases that are sometimes valid on account of the matter [of propositions], as when in remote matter a negative particular is converted simply, or when the same applies to a universal affirmative having convertible terms, then from the above definition the word 'formal' should be removed.

In this definition 'consequence' is placed as the genus so as to exclude the relationship of two propositions of which the second does not follow from the first. 'Formal' is put here to exclude a consequence that is valid on account of the terms. 'Of two propositions' is put here to exclude syllogistic consequence. 'Sharing both their terms in reverse order', i.e., that the subject of the first becomes the predicate of the second and the predicate becomes the subject, is put here to exclude equipollences retaining the same position of terms.

Now since we have spoken of formal and material consequence, we should investigate in what ways these agree and in what ways they differ. They agree in that it is impossible that their antecedents be true while their consequents are false. But they differ in that such a consequence is called 'formal' [*formalis*] that would similarly be valid if its propositions, similar in form, happened to be formed with any [other] terms. For example, just as 'A thing that is a man is an animal; therefore, a thing that is an animal is a man' is valid, so is 'A thing that is a B is an A; therefore, a thing that is an A is a B', and so on for any other terms. But a consequence is called 'material', or '[valid] on account of [its] matter' [*gratia materiae*], when it is valid with some terms but not with others, although the propositions remain of the same form. For example, 'A man is running; therefore, an animal is moving' is valid on account of [its] matter, but with the changing of the terms, while retaining similar forms of propositions, the consequence is not always valid, e.g.: 'A donkey is eating; therefore, a stone is seen'. Here I call 'terms' the subject and the predicate, and I speak of 'retaining similar forms of propositions', when the same quantity and quality are retained, with the same syncategorematic terms in the same

order, and also the same number and similar positions of the categorematic terms.

1.6.2 On simple conversion

> A simple conversion involves changing the subject into the predicate and the predicate into the subject, retaining the same quality and quantity of the propositions. And it is in this way that a universal negative and a particular affirmative are converted. For example, 'No man is a stone; therefore, no stone is a man' and 'Some man is an animal; therefore, some animal is a man'.

We should note first that in a simple conversion either proposition follows from the other, whereas this need not hold in the case of accidental conversion, for a particular follows from a universal, but not conversely.

Second, we should look to see why a universal negative and a particular affirmative are converted simply, whereas this applies to neither a universal affirmative nor a particular negative. The reason is that in the conversion of a universal negative and a particular affirmative the terms supposit in the same way both in what is converted and in that into which it is converted, in that both [terms supposit] distributively in the universal negatives and both determinately in the particular affirmatives. Indeed, what is designated in the universal negative is that nothing is supposited for both by the subject and by the predicate, for which reason, if this is indeed the case, either can be universally denied of the other; again, the particular affirmative designates that there is some same thing that is supposited for by both terms, although not everything supposited for by the one is supposited for by the other; whence, if this is indeed the case, then either of them is truly predicated of the other in a particular proposition.

But the reason why a universal affirmative is not converted likewise by simple conversion is that its predicate is not distributed, as in 'Every man is an animal', whereas if in the converted universal proposition it became the subject, then it would undergo distribution, as in 'Every animal is a man', and from what is distributed the non-distributed does not follow, as for example in 'Some man . . . ; therefore, every man . . .'. And for a similar reason a particular negative is not converted simply either, for its subject is not distributed, given that the negation follows it, as in 'A man is not white', but if it became the predicate in the converted proposition, it would be distributed, for the negation would precede it, as in 'A white thing is not a man'.

1.6.3 On accidental conversion

> Accidental conversion involves changing the predicate into the subject and the subject into the predicate, while preserving the quality but changing the quantity [of the proposition]. And this is how a universal affirmative is converted into a particular affirmative, e.g.: 'Every man is an animal; therefore, some animal is a man'.

We should note that in this type of conversion even a universal negative is validly converted into a particular negative: 'No B is A; therefore, some A is not B'. For by simple conversion the following is valid: 'No B is A; therefore no A is B', whence further 'No A is B; therefore, some A is not B', for a universal implies its subaltern particular; therefore 'No B is A; therefore, some A is not B' is valid, since whatever follows from the consequent follows from the antecedent.

We should also note that particular propositions cannot be converted accidentally, in such a way that they become universal ones (for from a non-distributed term there does not follow the distributed form, as was said above), the exception being that a particular negative is validly converted accidentally, so as to become a universal negative, if in the resulting proposition both the subject and the predicate are placed before the negation. For example, 'some animal is not a man; therefore, every man an animal is not [i.e., every man is such that some animal is not identical with him]' is valid, because nothing is distributed here that was not distributed before. Furthermore, if a universal follows, it is necessary that its particular subaltern follows too, e.g.: 'Some animal is not a man; therefore some man an animal is not [i.e., some man is such that some animal is not identical with him]', and thus a particular negative is converted simply.

But then, concerning this and the preceding part, the query is usually raised how the proposition 'Some stone is in a wall' is converted. And it seems that [it can] not [be converted] simply, because it is false that some wall is in a stone. Solution: I reply that an oblique term cannot be subjected or predicated in itself, in the sense of standing alone; rather, it is necessary that a nominative be added or implied, to which the oblique term is related as a determination to a determinable. Therefore the proposition: 'Some stone is in a wall' is to be analyzed into 'Some stone is a being in a wall', and this then is converted into 'A being in a wall is a stone'.

Second, it is asked how 'Some man is-loved' [*Aliquis homo amatur*] is converted. For it seems that it cannot be converted, since then the verb 'is-loved' [*amatur*] would have to be resolved into a copula and a participle of the same tense as the verb, but that is impossible, since there is no participle of a passive verb of the present tense. And if you resolve it into a past participle (e.g.,

'Some man is-loved; therefore, something loved is a man' [*Homo amatur, ergo amatum est homo*]), the consequence will not be valid: for take the first moment in which he is loved, but before which he was not being loved; then it is true that a man is-loved, but still it is not true that something [that already has been] loved [*amatum*] is a man; therefore, in this case 'A man is-loved; therefore something loved [*amatum*] is a man' is not valid.[79] To this we have to say that in such a case, for want of proper expressions the resolution needs to be carried out by means of the name 'what' [*quod*]. For example: 'A man is-loved' [*Homo amatur*], i.e., 'A man is what is-loved' [*Homo est quod amatur*], and then this is converted into: 'What is-loved is a man' [*Quod amatur est homo*].[80]

Third, one can have doubts about the proposition 'A donkey is dead'. For 'A donkey is dead; therefore, something dead is a donkey' is not valid; neither is 'A donkey is destroyed; therefore, something destroyed is a donkey', nor is 'A donkey is to be generated; therefore something to be generated is a donkey'. To all these we should reply in accordance with the rules for the ampliation of supposition.[81] For if the predicate is in the past or in the future tense [*praeteriti vel futuri temporis*], then it ampliates the subject to supposit for past or future things, even if the copula is of the present tense, but the subject cannot thus ampliate the supposition of the predicate.[82] Therefore, propositions like these have two conditions for their truth, namely, [the proposition 'A donkey is dead' is to be analyzed as] 'A donkey that exists is dead or a donkey that existed is dead'; and since the consequence that goes from many disjunctive conditions to one of them determinately is not a valid one, it is hence necessary to put a disjunction in the predicate of the converted proposition, as in 'A man is dead; therefore, something dead is or was a man', and similarly in 'A man is to be generated; therefore, something to be generated is or will be a man'.

And the same goes for 'possible', in its own way, for it ampliates to possibilia, even to those that never existed and perhaps will never exist either. Therefore we have to say, 'The Antichrist can run; therefore, what can run is or can be the Antichrist', and similarly, 'The Antichrist is a being in potentiality;

79. Apparently, what causes Buridan's problem here is his strict interpretation of a past participle as implying reference to past action (or passion), as opposed to a present-tense verb, which involves reference only to present action (or passion). So if a man starts being loved at time *t,* then at *t* it is true that he is-being-loved, *amatur,* strictly in the present; still, at *t* it is not yet true that he is loved (or rather that he has been loved, *amatus est*), even if this is true at every time later than *t* when he is being loved.

80. The point of this solution is that this type of conversion preserves the present-tense connotation of the verb, in contrast to the conversion by means of a past participle.

81. See 4.6.

82. The equivalent of the English adjective 'dead' is 'mortuus', a past participle in Latin.

therefore a being in potentiality is or can be the Antichrist'. And since even names such as 'lovable', 'generable', 'heatable', 'visible', 'risible', and their likes, and similarly 'amative', 'generative', 'calefactive', 'visive', etc., signify capacities (for 'lovable' is tantamount to 'can be loved', and similarly 'amative' is tantamount to 'can love', etc.), with these also, conversions need to be performed in terms of a disjunction between 'is' and 'can be', as in 'A woman is lovable; therefore, something lovable is or can be a woman', 'Fire is combustive; therefore something combustive is or can be fire', 'The Antichrist is risible; therefore something risible is or can be the Antichrist', and so on.

The same holds for propositions about the future and about the past, as in, 'A donkey will run; therefore, something that will run is or will be a donkey'; similarly, 'A donkey ran; therefore, something that ran is or was a donkey'.

But then a query arises about a negative [proposition], namely, how 'No dead [thing] is a man' is converted; for this does not imply 'No man is dead'. We should reply analogously with the previous cases. For just as there is no valid argument affirmatively from a term of broader extension [*magis amplum*] to a term of narrower extension [*minus amplum*], as in 'A is an animal; therefore, A is a man', or even 'A is a man or a donkey; therefore A is a donkey', so there is no valid consequence negatively from a term of narrower extension to a term of broader extension, so that the negation affects the term of broader extension, distributing the term of narrower extension. For a distributed inferior does not entail a distributed superior, as for example 'every man . . . ; therefore, every animal . . .', or even 'no man . . . ; therefore, . . . no animal'. But when we say: 'No dead [thing] is a man', the term 'man' is restricted to the present and is distributed, whereas when we say: 'No man is dead', the term 'man' is ampliated to past things, and is also distributed, whence the consequence is invalid. But in the proposition resulting from the conversion we need to preserve its restriction to the present just as it was restricted in the proposition that is converted, and this can be achieved by adding in the subject of the resulting proposition the phrase 'which is', which blocks the ampliation; e.g.: 'No dead [thing] is a man; therefore, nothing which is a man is dead', and so on for the rest.

Again, there is a query about 'A stone comes-to-be [*fit*] white' or about 'Whiteness comes-to-be'. Here we should say that a proposition with the verb 'comes-to-be' [*fit*] is to be expounded by a hypothetical proposition, one categorical component of which is negative, for Aristotle says that 'what comes-to-be is not'; for such a categorical need not be converted into another categorical, but [should be converted] in the same way as its exponents.[83] But

83. An exponent is one of the propositions figuring in the analysis of one of the so-called *exponibilia,* i.e., propositions that need to be analyzed in terms of several logically simpler

what the exponents of 'A comes-to-be' are should be discussed in natural science, for the ways in which 'comes-to-be instantaneously', 'comes-to-be continuously', 'comes-to-be subjectively' and 'comes-to-be terminatively' are expounded are different. And if something should be said about these in logic, then they will be discussed in the *Sophismata.*

But as far as 'Only a man runs' is concerned, it should be said that it has to be converted into a universal affirmative, namely, 'Every runner is a man'. Here the reason for this is that first it could be converted in terms of its exponents, and the result of this conversion is equivalent to 'Every runner is a man'. For example, the exponents are that a man runs and that nothing other than a man runs, and these are converted so that a runner is a man and no runner is other than a man, whence it follows that every runner is a man. I therefore state it as a universal rule that a proposition that needs to be expounded by several categoricals should be converted into those into which its exponents would be converted.

As far as the conversion of a singular proposition is concerned, about which the author does not speak, we should say that it is convertible, be it affirmative or negative; and it is converted into a singular if the predicate is singular, into an indefinite or particular if the predicate was a nondistributed common term, and into a universal if the predicate was a distributed common term, e.g., 'This is Socrates; therefore, Socrates is this', or 'This is not Socrates; therefore Socrates is not this', or 'Socrates is a man; therefore, a man is Socrates' or 'Socrates does not run; therefore, no runner is Socrates'.

Again, we should note that every negative particular can be converted into a particular negative in which both the subject and the predicate precede the negation. For example, 'Some animal is not a man; therefore, some man an animal is not'[84] is valid; for the supposition of the term 'animal' is not changed, whereas the term 'man' earlier was distributed, and later nondistributed; but a distributed term validly implies itself nondistributed. And thus it is clear that every categorical assertoric proposition can be converted by a formal conversion.

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propositions. For example, the proposition 'Every man except Socrates is running' is to be analyzed as 'Socrates is not running and every man other than Socrates is running'. Examples of exponibilia included exceptive, exclusive, and reduplicative propositions, as well as propositions containing the verbs *incipit* (begins to),*desinit* (ceases to), and so on. See N. Kretzmann, "Syncategoremata, exponibilia, sophismata," in *The Cambridge History of Later Medieval Philosophy,* ed. N. Kretzmann, J. Pinborg, and A. Kenny (Cambridge: Cambridge University Press, 1982), pp. 211–45.

84. That is, since some animal is not a man, therefore some man is such that there is an animal that is not identical with him.

Finally a query is raised about propositions with verbs in a past or future tense—e.g., 'A white thing will be black' or 'A white thing was black', and similarly 'A boy will be an old man', or 'An old man was a boy': how are they converted? To this the brief reply is that a verb of past tense ampliates the subject to supposit not only for things that are, but also for things that were, and a verb of future tense likewise ampliates to future things. Therefore, the proposition 'B was A' is equivalent to 'What is or was B was A', whence it is converted as 'What was A is or was B'; and thus also 'B will be A' is equivalent to 'What is or will be B will be A', and so it is converted as 'What will be A is or will be B'. So also the propositions listed above are converted in the same way: 'A white thing will be black; therefore, what will be black is or will be white', and similarly 'A boy will be an old man; therefore, he who will be an old man is or will be a boy'; similarly, 'An old man was a boy; therefore, he who was a boy is or was an old man'; and thus also with the cases of 'white' and 'black'.

1.6.4 On contraposition

> Conversion by contraposition is changing the subject into the predicate and the predicate into the subject while preserving the same quality and quantity, but changing the finite terms into infinite ones. And thus are converted universal affirmatives and particular negatives, as in, 'Every man is an animal; therefore, every non-animal is a non-man', 'Some man is not a stone; therefore, some non-stone is not a non-man'.

We should note that this [type of] conversion is not formal, for although it is valid assuming the constancy of terms, with terms suppositing for nothing it need not be valid. For example, 'Every man is a being; therefore, every non-being is a non-man' is not valid, for the first proposition is true, and the second is false, because it is an affirmative the subject of which, namely, the infinite term 'non-being', supposits for nothing. Similarly, 'Some chimera is not a man; therefore, some non-man is not a non-chimera' is not valid, for the first proposition is true and the second is false, since the contradictory of the second, namely, 'Every non-man is a non-chimera', is true, for every non-man is a being and every being is a non-chimera.

1.6.5 Two notable points

(1) We should realize that the sign of quantity in the subject of the proposition to be converted has to be added to the predicate and the resulting whole has to be placed on the side of the subject, e.g.: 'Some man is an animal; therefore, some animal is a man'. (2) Furthermore, the conversions of an indefinite and of a particular amount to the same.

This final part has two sections, which amount to two notable points.

Concerning the first notable point we should realize that the sign [of quantity] need not always stay the same; indeed, in accidental conversion the universal sign needs to be changed into a particular sign, as in: 'Every man is an animal; therefore, some animal is a man'.

But a doubt emerges, because according to this rule sometimes two signs should be added to the same term, as in, 'some some man' or 'no no man', which seems to be absurd, for it is redundant [*nugatio*] to say 'Some some man runs'. The [apparent] consequence is proved thus: it was said earlier, and it is commonly held, that the whole which is placed on the side of the predicate is an integral part of that predicate (e.g., if I say 'Some man is some animal', the whole phrase 'some animal' is the predicate, and similarly if I say 'No man is no animal', the whole phrase 'no animal' is the predicate); therefore, when adding the sign of the subject to the predicate, in performing the conversion we are committed to saying 'Some some animal is a man' and 'No no animal is a man'.

Solution: I say that if this appears to be an unacceptable locution, then in such a case conversion may take place by applying the name 'which' [*quod*]. For example, 'Some man is some animal; therefore, something which is some animal is a man', and similarly 'No man is no animal; therefore, nothing which is no animal is a man'.

Concerning the second notable point we should realize that a particular and an indefinite have the same [type of] conversion, for they have the same causes of truth [*causae veritatis*] and falsity,[85] since their terms supposit in the

85. One might be tempted to translate *causae veritatis* as 'truth-conditions'. But we should resist this temptation, given Buridan's strict technical usage of this phrase. (See also Treatise 9, chap. 2 in this volume.) In his *Tractatus de Consequentiis* [Treatise on consequences], Buridan describes what he means by 'causes of truth' as follows: "And by the 'causes of truth' of a given proposition I understand propositions which are such that any of them would suffice for the truth of the given proposition." J. Buridan, *Tractatus de Consequentiis,* ed. H. Hubien (Louvain: Publications universitaires, 1976), p. 19. Naturally, Buridan's causes of truth and the modern truth-conditions yield the same truth-values for the same propositions under the same factual circumstances. Nevertheless, given the fact that Buridan's semantics does not make the comprehensive and systematic distinction between metalanguage and object-

same way. But in some copies we have a different text, according to which a particular, an indefinite, and a singular have the same [type of] conversion, but this need not hold for singular propositions; for a negative singular is validly converted also into a universal negative, e.g., 'Socrates is not running; therefore, nothing running is Socrates'.

1.7 Chapter 7: On hypothetical propositions

1.7.1 On hypothetical propositions in general

(1) Next, we deal with hypothetical propositions. A hypothetical proposition is one that has two categorical propositions joined by some conjunction or by some adverb. (2) And its name derives from 'hypo', i.e., 'sub-' [under] and from 'thesis', i.e., 'positing', i.e., as it were, 'suppositive locution'.

The seventh chapter is about hypothetical propositions, and it contains eight principal parts: the first provides a description of hypothetical propositions and the etymology of their name; the second enumerates the species of hypothetical propositions; the third discusses conditional hypotheticals in particular; the fourth discusses conjunctives, the fifth disjunctives, the sixth causals, the seventh temporals, and the eighth locals.

The first part contains two sections, namely, the description of hypotheticals and [the reason] why they are called hypotheticals.

As to the first section we should know, it seems to me, that properly speaking a hypothetical proposition does not contain several propositions. For example, in the proposition 'God does not exist or a man is an animal', which is true, the utterance 'God does not exist' is not to be taken to be a proposi-

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language that lies at the core of the modern theory of truth-conditions, the two semantic notions are not the same. As we shall see, Buridan has rather different conceptual devices to handle the problems (most important, the liar-type paradoxes), which gave rise to the modern distinction rooted in Tarski's work. See Hughes's introductory study in J. Buridan, *John Buridan on Self-Reference. Chapter Eight of Buridan's Sophismata*, ed. G. E. Hughes (Cambridge: Cambridge University Press, 1982).

tion. I prove this in the following way: if it were a proposition, then everyone uttering that hypothetical would say something false; the consequent is false; therefore, so is the antecedent.

The falsity of the consequent is obvious by common usage, for nobody, whether a cleric or a layman, would argue that a man would be saying something false, were he to utter that disjunctive proposition. Indeed, if someone were to say 'I will go or I will not', then another would immediately reply: 'That I know well'.

Again, the proposition 'If a donkey flies, then a donkey has feathers' is conceded as true, but it would be absurd for a true proposition to have its principal parts false.

Again, someone knowingly and intentionally asserting something false lies; therefore someone intentionally and assertively saying that God exists or a man is a donkey would lie, and this is false.

Again, in the Bible and in the demonstrative sciences many such hypotheticals are asserted, but thus they would be false and heretical, and this is an absurd assertion.

Therefore, it appears to me that when it is said that a hypothetical proposition is one that contains two categorical propositions, this is not true, strictly speaking, but it is true in the sense that a hypothetical proposition contains two predicates and two subjects and two copulas, and that each of those predicates is predicated of one of those subjects by the mediation of one of those copulas. The aggregate of one predicate, one subject, and their copula is not a proposition, but is rather a part of a proposition, although such an utterance, were it taken separately, would indeed be a categorical [proposition].

Second, we should note that some propositions in which there are no words that a grammarian would call conjunctions or adverbs are hypothetical. For just as the proposition 'Socrates is where Plato is' is hypothetical, so also the proposition 'Socrates is in the place in which Plato is' is hypothetical; it contains, however, neither conjunctions nor adverbs. Again, the proposition 'Socrates is like Plato' is just as hypothetical as the proposition 'Socrates is such as Plato is', in which, however, there are only names and verbs. And thus it appears to me that in the description of hypothetical propositions we need not add the part 'joined by some conjunction or by some adverb'.

But then it is asked whether at least the part 'joined' should be added. And it seems to some people that it should, for if someone forms an expression that is an aggregate of two categorical propositions without a conjunction, as the whole phrase: 'A man runs, a donkey walks', this is not a hypothetical, for one could not say to which species of hypothetical propositions it belongs, and it seems that it does not differ from a hypothetical except in not being joined

by a conjunction; therefore it should be said that a hypothetical proposition is one that contains two categorical propositions joined together.

I reply that this does not have to be added. For such unjoined expressions are not a proposition but are several propositions: for they are not one proposition, as is clear from bk. 1 of *On Interpretation*,[86] but if they are not one proposition, then they are not a proposition, since 'being' and 'one' are convertible, as is clear from bk. 4 of the *Metaphysics*,[87] and the definition of proposition and of one proposition is the same, as well as of man and of one man, as bk. 1 of the *Sophistical Refutations*[88] has it. Therefore, if we say 'a hypothetical proposition is a proposition that contains several categoricals', this already excludes several propositions [i.e., an aggregate of several unjoined propositions] by the mention of 'proposition', without any further addition.

Next, a doubt is raised, for it seems that the proposition 'A man who is white is colored' is hypothetical, as well as the proposition 'Every donkey, if it flies, has wings'.[89] And it appears to me that they are categorical; for the predicate 'colored' is predicated of the whole phrase 'man who is white' as of its subject, and also the predicate 'having wings' is predicated of the whole phrase 'donkey if it flies' by the mediation of the copula 'is' implied in the verb 'has'.[90]

But then you would say: "In 'A man who is white is colored' there are two subjects, two predicates, and two copulas; why is it not, then, a hypothetical proposition?" To this I reply that it is a categorical insofar as the whole is contained in one predicate, in one subject, although in a complex one, and in

86. Aristotle, *On Interpretation* 5.17a15–17.

87. Aristotle, *Metaphysics* IV.2.1003b23.

88. Aristotle, *On Sophistical Refutations* 6.169a7.

89. *Omnis asinus si volat habet alas.* It is Buridan's subsequent parsing of this sentence, which I think is mistaken, that forces this somewhat awkward translation.

90. So it seems that Buridan thinks the correct reconstruction of this sentence is: *Omnis asinus si volat est habens alas* (Every donkey if it flies is something having wings), where the subject is *asinus si volat* (donkey if flies) and the predicate is *habens alas* (something having wings). But this parsing seems to be mistaken. For if we explicate the implicit anaphoric pronouns by means of *Omnis asinus [est talis quod] si ille volat, tunc ille habet alas,* i.e., 'Every donkey [is such that] if it flies, then it has wings', then this sentence is clearly hypothetical, containing two complete clauses of a conditional 'if . . . , then' (which in turn is further embedded in the qualifying clause 'such that'), namely, 'it flies' and 'it has wings', in which the pronoun 'it' is restricted to donkeys by the head-noun 'donkey'. On the other hand, we might also reconstruct this sentence as a categorical thus: *Omnis asinus est quoddam quod, si volat, habet alas,* i.e., 'Every donkey is something which, if it flies, then it has wings'. But then here the subject is 'donkey' and the predicate is 'something which, if it flies, then it has wings'.

one copula, and this is not the case with 'A man is white, who is colored'.[91] Therefore finally it seems to me that a more reliable definition would be the following: 'a hypothetical proposition is one that has several subjects, several predicates and several copulas, but none of these is predicated of the rest by means of one of the copulas'.

1.7.2 The species of hypothetical propositions

There are six species of hypothetical propositions, namely, conditional, conjunctive, disjunctive, causal, temporal, and local.

Concerning the second part we should note that some texts do not provide the species 'temporal' and 'local', because they can be reduced to conjunctive propositions, for saying 'Socrates is where Plato is' amounts to the same as saying 'Socrates is somewhere and Plato is there', and in the same way, saying 'Socrates lectured when Plato disputed' is equivalent to saying 'Socrates lectured sometime and then Plato disputed'.

Furthermore, we should know that if these, namely, 'temporal' and 'local', are to be taken as distinct species of hypotheticals, then the same should apply also to the other categories; e.g., in [the category of] quantity: 'Socrates is as big as Plato is' is equivalent to 'Socrates is of some quantity and Plato is of that quantity'; similarly, in [the category of] quality, 'Socrates is like Plato' is equivalent to 'Socrates is of some quality and Plato is of that quality'; similarly, in [the category of] substance, 'Socrates is what a white thing is' is equivalent to 'Socrates is something and that thing is a white thing'; similarly, in [the category of] relation, 'Socrates is related to Plato as Peter is related to John', which is equivalent to 'Socrates is related to Plato in some way, and Peter is related to John in that way'.

And the same goes even for the other categories, only not so obviously, because we do not have interrogatives so properly imposed on them as in the previous cases.[92] For we might say, in [the category of] position, that Socrates

91. This is because this latter would be equivalent to 'A man is white and he is colored', which is obviously hypothetical, whereas the original is a categorical in which the complex subject 'man who is white' is joined by the copula 'is' to the predicate 'colored'.

92. Well, in English, precisely because of the lack of a systematic correspondence between interrogatives and the abstract as well as the concrete forms of the categories, even the previous cases are not so transparent *grammatically* as in Latin. But the *logical* equivalences are still obvious in each case.

is positioned or situated, just as Plato is positioned, as when both are sitting in a similar position, and, in [the category of] habit, that Socrates is dressed in the way Plato is dressed, and, likewise in [the category of] action, that Socrates is acting in the way Plato is acting, and the same goes for [the category of] passion.[93]

1.7.3 On conditional propositions

(1) A conditional is [a hypothetical proposition] in which two categorical propositions are joined by the conjunction 'if', as in 'If a man is, an animal is'. (2) The truth of a conditional requires that the antecedent cannot be true without the consequent, hence every true conditional amounts to one necessary consequence. (3) Its falsity requires that the antecedent can be true without the consequent, as in 'If a man is, a man is white'.

The third part contains three sections, namely, the description of the conditional proposition and [a description of] what is required for its truth and [of] what is required for its falsity.

As to the first section we should note that the following is a true and necessary conditional: 'If a man is a donkey, then a man is a brute animal'. Now it is obvious that if this hypothetical contains two propositions as its principal parts, then both are false and impossible, and it is quite amazing that a proposition is true the two principal parts of which are false and which has no true parts, yet is such that someone uttering it cannot be proven to say something false and to lie. Therefore, as I said earlier, it does not seem to me that those two parts of the hypothetical are two propositions, although two such utterances unconnected would indeed be two propositions. Nevertheless, following the authors' practice, for the sake of brevity, and because phrases [*sermones*] signify conventionally, I also wish to embrace this manner of speaking and use it, although in the sense given earlier, namely, that by 'two categoricals' we should understand two predicates predicated of two subjects by the mediation of two copulas so that none of those predicates is predicated of the rest by the mediation of one of the copulas; and this is how I wish to use this locution henceforth.

As to the second clause, we should note that in a conditional proposition the categorical to which the word 'if' is added we call the *antecedent,* and the

93. See 1.1.1 n. 6.

other we call *consequent,* whichever precedes or follows the other. For example, whether we say 'If a man runs, an animal runs' or we say conversely 'An animal runs, if a man runs', in both cases 'a man runs' is the antecedent, and 'an animal runs' is the consequent.

Again, we should note that although 'If a man runs, an animal runs' is true, nevertheless, 'a man runs' can be true without 'an animal runs', for it would be just as true even if that other proposition did not exist. Therefore we should expound [the description above] so that it implies that the antecedent cannot be true along with the consequent's not being true, provided both exist simultaneously, or even better, that it is not possible for things to be in the way signified by the antecedent without their being in the way signified by the consequent, in the sense given in the second chapter of the *Sophismata.*[94]

And the third section also should be expounded in accordance with what has been said.

Nevertheless, we should note that those rules do not apply to consequences 'as of now' [*consequentia ut nunc*],[95] for those are not simply valid consequences but are valid only along with the assumption of some contingent truth, e.g., 'Gerard is with Buridan; therefore he is in rue du Fouarre'.[96] Further, they do not apply to promissive consequences concerning future contingents, either, e.g., 'If you visit me, I'll give you a horse'; for the antecedent can be true while the consequent is false; but if it turns out that he gave the visitor a good horse, nobody could argue that he [who made the promise] said something false, but he will be recommended as a truthful and honest man.

1.7.4 On conjunctive propositions

(1) A conjunctive proposition is one in which two categorical propositions are joined by the conjunction 'and', as in, 'Socrates runs and Plato disputes'. (2) The truth of a conjunctive [proposition] requires that both categoricals be true, and for its falsity it suffices if either of them is false.

94. *Sophismata,* chap. 2, Fourteenth conclusion.

95. A consequence 'as of now' *(consequentia ut nunc)* is described by Buridan as one that is valid in the actual circumstances, as opposed to 'simple' consequences *(consequentiae simplices),* which are valid in any circumstances. Cf. Buridan, *Tractatus de Consequentiis,* p. 23.

96. The rue du Fouarre ("Straw Alley," so-called after the straw or hay on which students sat during lectures) is the street where arts lectures usually took place.

The fourth part contains first of all a description of conjunctive propositions. But when it says "joined by the conjunction 'and'," it has to be supplemented by 'or by an equivalent [phrase]', such as 'as well as' instead of 'and' or 'also', or others like these.

And when it says 'two categorical propositions', it has to be supplemented by 'or more'. For a conjunctive proposition may contain ten categoricals, and then its truth would require that all be true, and for its falsity it would suffice if one of them is false. For example, the proposition 'God exists and man is an animal and the heavens move and a donkey is a goat' is false.

1.7.5 On disjunctive propositions

(1) A disjunctive proposition is one in which two categoricals are joined by the conjunction 'or', as in, 'Socrates runs or Plato disputes'. (2) For its truth it is required and is sufficient that one member of it be true, and for its falsity it is required that both its members be false.

The fifth part should be supplemented just as the preceding part, namely, "by the conjunction 'or' or by some equivalent phrase," and 'two categoricals or more'. And if a disjunctive contained ten categoricals, then it would be true if one of them were true, and it would not be false unless all of them were false.

And we should note that a conjunctive and a disjunctive are related to their causes of truth in an opposite manner, for if a conjunctive is true, then every [member of it] has to be true, and if some [member] of it is false, then it is false, whereas, conversely, in a disjunctive every [member of it] has to be false if it is false, and if some [member of it] is true, then it is true. And from this it follows that if their categorical [members] are opposites, namely, contradictories, then the conjunctive will be the contradictory of the disjunctive. Whence the rule is usually given that every conjunctive is contradicted by a disjunctive formed from the contradictories of the categoricals [i.e., the categorical members of the conjunctive] and conversely,[97] as the disjunctive 'Every man runs or every donkey is a goat' is contradicted by the conjunctive 'Some man does not run and some donkey is not a goat'.

97. This is one way of putting what contemporary logic books call de Morgan's law: $\sim(p \,\&\, q) \leftrightarrow \sim p \vee \sim q$.

1.7.6 On causal propositions

(1) A causal proposition is one in which two categorical propositions are joined by the conjunction 'because'. (2) Its truth requires that the antecedent be the cause of the consequent, as in 'Because the sun shines above the earth, it is daytime'. (3) Its falsity requires that the antecedent not be the cause of the consequent, as in 'Because Socrates runs, there is a solar eclipse'.

We should note, just as we did in connection with conditionals, that by 'antecedent' we understand the categorical to which the word 'because' is added, and by 'consequent' we understand the other categorical, whichever of them is put first or second, as when I say 'It is daytime, because the sun shines above the earth'.

But we should also note that it is not properly said that the antecedent is the cause of the consequent, for the antecedent and the consequent are two propositions, either of which can be formed without the other, whence neither is the cause of the other. Therefore that the antecedent is the cause of the consequent has to be understood so that the knowledge of the antecedent is the cause of the knowledge of the consequent, or the thing signified by the antecedent is the cause of the thing signified by the consequent, and this is even better.

We should also note that when it is said that "by the conjunction 'because'," this has to be supplemented by "or by some other equivalent conjunction, such as 'since', 'for', or something like these," e.g., 'It is daytime, since the sun shines above the earth', or 'for the sun, . . . etc.'.

We should also note that some hypotheticals contain several categoricals joined by the conjunction 'therefore' or some equivalent phrase. For such is a syllogism, or an induction or another sort of argumentation (taking this to be the aggregate of premises and conclusion), and [such an argumentation] is one hypothetical proposition. Now the author perhaps did not mention this type, because he intended it to be analyzed in terms of causal or perhaps conditional propositions, since in both cases there is a consequence involved. It appears to me, however, that this type differs from causals, for a syllogism can be from what is posterior [*a posteriori*], which is not causal, or it can proceed from false [premises], where there is neither a cause nor an effect, as in 'Every B is A, every C is B; therefore, every C is A'. Again, a syllogism differs from a conditional proposition, for in a conditional proposition the categorical propositions are in no way asserted, i.e., affirmed, but in syllogisms they are propounded in an assertive manner, e.g., every B is A and every C is B, and from this it is concluded assertively that every C is A. Therefore we say of a syllogism from false premises that it is faulty in its matter [*peccat in mate-*

ria], which is not the sort of thing to be said about the conditional 'If a donkey flies, then a donkey has wings'.

And it seems to me that such a hypothetical, namely, one formed by joining categoricals by means of 'therefore', should similarly be judged to be false if the consequence that is designated by the word 'therefore' is not necessary, and also that it is false, absolutely speaking, if one of its premises is false. This is not contradicted by Aristotle, who says about a syllogism with false premises that it is a syllogism and it should be called a 'syllogism'. For I concede that for such a hypothetical expression to be a syllogism it is required and sufficient that it be a necessary consequence constituted from two premises and a conclusion, which are formed from three terms. But we should also say that some syllogisms may be false and some may be true; so something is truly a syllogism that is not a true syllogism, just as something is truly a conjunctive or conditional proposition that is not a true conjunctive or conditional proposition.

1.7.7 On temporal propositions

(1) A temporal hypothetical proposition is one that contains two categoricals joined by the adverb 'when', as for example 'Socrates runs when Plato disputes'. (2) Its truth requires that both categoricals be true for the same time; its falsity requires that they be not true for the same time.

We should note, with regard to the description of temporal hypothetical propositions, that there can be a temporal hypothetical without the adverb 'when', given an equivalent, as for example, 'Socrates runs *at the time at which* Plato disputes'.

As regards their truth and falsity we should note that for the truth of a temporal it does not suffice for its categoricals to be true at the same time; for the propositions 'Aristotle existed' and 'The Antichrist will exist' are true at the same time, namely now, but it is required and sufficient that the copulas of the categoricals consignify the same time and that they be true *for* the same time, although not at that time.[98]

98. That is, they should be true *for* the time that they both consignify, but they need not be true *at* that time, for at that time they may not even exist. For example, the sentence 'When God created the world the world began to exist' is true *for* the first instant of time, but not *at* that time, for at that time this proposition did not exist.

1.7.8 On local propositions

(1) A local hypothetical proposition is one that contains two categoricals joined by the adverb 'where', for example, 'Socrates runs where Plato disputes'. (2) Its truth requires that both of them be true for the same time; for its falsity it is required and sufficient that they not be true for the same time.

We should note that, analogously with temporals, a local hypothetical can be formed without the adverb 'where', given an equivalent, e.g., 'Socrates is in the place in which Plato is'.

Similarly, concerning its truth and falsity, we should note that it is necessary for its truth that both categoricals be true for the place designated by the word 'where', and it is not sufficient that they are true for the same place.

But we should note at the same time that we can give a general reason or rule for the truth and falsity of temporal, local, and other hypothetical propositions, which relate in an analogous way to the other categories (such as the quantitative hypothetical, which is formed by 'as big', the qualitative, which is formed by 'like', and the substantial, which is formed by 'what'), namely, [the rule] that they are to be analyzed into conjunctive propositions in the way described above, and then they are true if the corresponding conjunctive propositions are true, and false if the latter are false; and we described earlier [in this chapter] what is required for the truth and falsity of conjunctive propositions.

Now this is a simple method. The other method, given by the author, is complicated, for it requires a special account in each case. Thus, 'Socrates is like Plato' is true not because Socrates and Plato have the same quality, but because they have a similar quality; and 'Socrates is as big as Plato is' is true not because they have the same quantity, but because they have equal quantity; but it is necessary that if Socrates is what Plato is, that it be the same substance. And this is to be worked out in detail in the *Sophismata,* where relatives will be discussed.[99]

99. This account is not given in the *Sophismata,* but relatives do receive a systematic treatment in 4.4.

1.8 Chapter 8: On modal propositions

1.8.1 The description of mode

A mode is a determination belonging [*adiacens*] to the thing.

The eighth chapter is about modal propositions. It contains ten principal parts. The first provides a description of 'mode'. The second shows which modes render a proposition modal. The third will determine what is the subject in a modal proposition, what the predicate, and what the copula. The fourth will discuss their quality, the fifth their quantity, the sixth their oppositions, the seventh their equipollences, the eighth their conversions, the ninth propositions called 'composite modals', and the tenth will be about the conversion of contingent propositions in particular.

The first part describes 'mode', [stating] that a mode is a determination belonging to the thing. But 'thing' need not be taken here in its broadest sense, in which it is converted with 'being', for that would not be sufficiently close to the sense intended here; rather, 'thing' is restricted to supposit for significative terms that are determinable by other terms added to them, these being called 'determinations', in the way in which an adjective is a determination of a substantive and an adverb is a determination of a verb, as in the proposition 'A white man runs quickly'.

Next we should note with respect to the entire chapter that the author of the *Summulae*[100] discusses modal propositions very briefly and incompletely. Therefore, to complete the treatise, I will not follow his text but provide a different text, to such an extent as will seem to me to be useful.

1.8.2 The modes that render a proposition modal

(1) A mode is sometimes a determination of the copula and sometimes a determination of some term placed either in the predicate or in the subject. (2) And if a determination concerns the subject or the predicate, then it does not render the proposition modal, as is the case with 'A white man runs' or 'A man runs fast', i.e., 'A man is running fast'. (3) But if it affects the copula, then it renders the proposition modal, as is the case with 'A

100. That is, Peter of Spain.

man is necessarily an animal' or 'A man can be running'. (4) These modes are 'possible', 'impossible', 'necessary', 'contingent', 'true', 'false'.[101]

The second part contains four sections. The first provides a division of modes, the second shows which modes do not render a proposition modal, the third shows which modes do render it modal, and the fourth enumerates the modes that render propositions modal.

As regards the first section, we should note that many adverbs are determinations of verbs that do not affect the copula, although the copula is implied in the verb; rather, they affect the participle that would be the predicate if the verb were analyzed into predicate and copula, as in the case of 'A man runs fast', the sense of which is that a man is running fast.

As regards the second section, we should note that from such a determination affecting the subject validly results a *whole-in-mode* [*totum in modo*],[102] if the determinable is taken without the determination, and a *part-in-mode* [*pars in modo*], if it is taken with the determination, as the expression 'white man' is said to be a part-in-mode with respect to the term 'man'. And in such cases the *locus from the whole in mode to its part* and its converse are valid, unless a fallacy of *secundum quid et simpliciter* is committed.[103]

As to the third section, it is asked whether temporal adverbs, such as 'today', 'tomorrow', and 'yesterday', are determinations of the copula or not. And it seems to me that we should reply that the adverbs in 'Socrates is white today' or in 'Socrates was white yesterday' are the determinations of the verb that is the copula, but not insofar as it is the copula but insofar as it connotes some time, say, present, past, or future. For those determinations have the function to determine the time, but such a modification does not render a proposition modal as logicians speak about modal propositions, distinguishing them from those about present inherence [*de inesse*], about future inherence [*de fore*], or about past inherence [*de fuisse*].[104]

101. In the translation we shall also have to use other modal phrases (in their meaning corresponding to, but in their etymology and syntactic behavior, and occasionally in their connotations, different from the modes listed here): 'can' and 'able' corresponding to 'possible'; 'unable' corresponding to 'impossible'; 'has to' corresponding to 'necessary; and 'happens to' corresponding to 'contingent'. It will be important to keep in mind, however, that whenever these modal phrases occur, they are used to render the Latin constructions containing the equivalents of the modes listed here in the text. See also nn. 106 and 113 below. For an example see n. 118 below.

102. "A whole-in-mode is a common term taken without any determination, as in 'A man runs', 'A donkey walks'; a part-in-mode is the same common term taken with some determination, as in 'white man', 'Socrates' donkey', 'runs fast', 'walks gracefully'." See 6.4.6.

103. See 7.2.5 (5).

104. Buridan's point here is that temporal adverbs determine only the time of the predi-

As to the fourth section, we should note that many people say that every determination which is apt to determine a term that supposits for a proposition or propositions insofar as they are called a proposition or propositions renders a proposition modal, even if it is the subject or the predicate or if it belongs to the subject or the predicate, as in the cases of all the following terms: 'true', 'false', 'possible', 'impossible', 'necessary', 'contingent', 'affirmative', 'negative', 'universal', 'particular', 'indefinite', 'singular', *'per se'*, *'per accidens'*, 'with respect to what the thing is' [*secundum quod ipsum*], 'exclusive', 'exceptive', 'reduplicative', etc.[105]

But I do not think this is true; indeed, even propositions in which the terms 'possible', 'impossible', 'necessary', 'contingent', 'true' and 'false' occur, should these be subjects or predicates, are to be regarded as assertoric, for in them the predicate is predicated of the subject by the mediation of the copula 'is' taken simply, without its determination. For example, the following propositions all are assertoric: 'A proposition is possible', 'A proposition is necessary', or 'true', or 'false', or 'affirmative', or 'negative', or 'known', or 'believed', or 'doubted', or 'unknown', and so forth.

It is true, nevertheless, that such propositions involve many difficulties, even those that are called 'composite modals' or '[modals] in the composite sense', these being designations that I do not intend to reprove, given that words are imposed to signify at will [*ad placitum*]. But I do want to say that they are not to be called modals in the sense in which we distinguish modal propositions from assertoric ones. Nevertheless, they will be discussed a little in the ninth part of this chapter and more amply in the *Sophismata.*

But it is certain that the following are properly modal propositions: 'Every man is able to run'[106] or 'Every man can run', 'Every man is necessarily an ani-

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cation connoted by the copula, not the way in which the predicate belongs to, or "inheres in," the subject (i.e., necessarily, possibly, etc.). Concerning the terminology of 'inherence' see 1.3.4 n. 62.

105. Most terms on this list obviously apply to propositions, insofar as they are propositions, but some, especially toward the end of the list, may be in need of some explanation. *'Per se'* and *'per accidens'* indicate propositions involving essential and accidental (which for Buridan equals denominative) predication. 'With respect to what the thing is' *(secundum quod ipsum)* refers to propositions involving, again, essential predications, i.e., propositions in which the predicate applies to the subject on account of what the subject is, i.e., insofar as what the subject is, with the added requirement that the predicate be convertible with the subject. See 8.6.4. Again, exclusive, exceptive, and reduplicative propositions are kinds of propositions exemplified by 'Only Socrates runs', 'Everybody except Socrates runs', and 'A man insofar as a man is rational', respectively.

106. *Omnem hominem possibile est currere.* Other translations of this sentence might be: 'For every man it is possible to run', 'Every man possibly runs', 'Every man can run' (which, how-

mal', 'Socrates is contingently white', and 'A man cannot be a donkey'. And according to our author even the following would be modals: 'Every man is truly an animal' and 'Every stone is falsely a donkey'.[107] Similarly, many people say that even the following are properly modals: 'A is known to be B', and 'A is believed to be B', or 'appears' or 'is opined to be B', and so on for others. But the author discusses only the modes 'possible', 'impossible', 'contingent', and 'necessary'; therefore I will also principally discuss these and will only touch on the others.

1.8.3 On the subject, predicate, and copula of modals properly so-called

(1) We should note that in modals properly so-called, the mode has to be placed between the subject and the predicate, and what precedes the mode and the verb is the subject or something belonging to the subject, and what follows is the predicate or something belonging to the predicate, and the aggregate of the mode and the verb is the copula; (2) as in the proposition 'A man is able to be white' [*Hominem possibile est esse album*], the word 'man' is the subject, 'white' is the predicate, and the

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ever, is reserved for *Omnis homo potest currere),* or 'Every man is possibly running'. It is only the 'is able to' construction in English, however, that exhibits syntactic and semantic features sufficiently similar to those that Buridan will exploit for his theoretical considerations concerning the Latin construction. Therefore, whenever this construction occurs in the text, we should always think of it as being used with a meaning that it has in common with any of the constructions listed above, determining only that the predicate belongs merely possibly (i.e., perhaps not necessarily, and perhaps not even actually, but not impossibly) to the subject. Therefore, despite the conceptual connection between this construction and our notion of abilities in English, this construction is not intended here to convey any specific considerations concerning some peculiar "logic of abilities." See 1.8.2 n. 101.

107. Again, a smoother translation would be 'It is false that a stone is a donkey', or even 'That a stone is a donkey is false', but this translation would ruin Buridan's contrast between real modals and composite modals. The point is that since in these "smoother" sentences the that-clause is a sentential nominalization, the mode functions here as the predicate of this nominalization, which in turn functions as the subject joined to the modal predicate by an *assertoric copula.* But, according to Buridan (and medieval logicians in general), in a strictly modal proposition the mode has to have the function to modify the copula of the original sentence to form a *modal copula,* e.g., 'can be', 'is possibly', 'has to be', 'is necessarily', and so on in idiomatic English.

whole phrase 'is able to be' [*possibile est esse*] functions as the copula, and so on in other cases.

The third part contains two sections, namely, a rule and an example.

As to the rule, we should note that if the mode is placed at the beginning of the proposition or at the end, the proposition is usually called a composite modal, as I said earlier, but more properly speaking it should instead be called an assertoric [*de inesse*] proposition, e.g., 'It is possible that a man runs', 'That a man runs is possible', or 'Of necessity, every man is an animal', for this, by virtue of its proper meaning [*de proprietate sermonis*], is equivalent to 'It is necessary that every man is an animal', the subject of which is 'necessary', the predicate of which is 'that every man is an animal', and the copula of which is the verb 'is'.[108]

As far as the example is concerned, one may have questions about other cases as well, as for example about 'A man is of necessity [*de necessitate*] white', about 'A man can run', about 'A man happens to run,' and about similar propositions, the question being as follows: what in them is the subject, what the predicate, and what the copula? To this I reply that in 'A man is of necessity an animal' the subject is 'man', the predicate is 'animal' and the rest is the copula.[109] And this proposition is equivalent to 'A man is necessarily an animal', where the whole phrase 'is necessarily' functions as the copula. But concerning 'A man can run' [*Homo potest currere*] we should say that, just as in the case of assertoric propositions such as 'A man runs' [*Homo currit*], one must, in order to distinguish the subject, predicate, and copula, analyze the verb 'runs' [*currit*] into 'is running' [*est currens*], so also with 'A man can run' [*Homo potest currere*] or 'A man is able to run' [*Hominem possibile est currere*], the verb 'to run' is to be analyzed into 'be running' [*esse currens*] or 'to be running' [*esse currentem*]. And then in 'A man can be running' [*Homo potest esse currens*] 'man' [*homo*] is the subject, 'running' [*currens*] is the predicate, and 'can be' [*potest esse*] is the copula, whereas in 'A man is able to be running'

108. Since in English the conversion of 'That every man is an animal is necessary' requires the addition of the pronoun 'it', the syntax of the English sentence 'It is necessary that every man is an animal' is a little bit more complicated than that of the corresponding Latin: *Necessarium est hominem esse animal.* Perhaps another possible translation, somewhat closer to the original, but less idiomatic, would be: '[Something] *necessary* is *that a man is an animal',* or even, '[Something] *necessary* is *for a man to be an animal'* (where I italicized the referring expressions, namely, the subject and the predicate). In any case, in each of these formulations it is clear that it is an unmodified copula that joins the referring expressions, and this is Buridan's point.

109. Of course, the indefinite articles, required only by English syntax, are not part of the copula. The modified copula in this English sentence is only 'is of necessity'.

[*Hominem possibile est esse currentem*], the subject is 'man' [*homo*], the predicate is 'running' [*currentem*], and the whole phrase 'is able to be' [*possibile est esse*] functions as the copula. The same goes for other similar propositions.

Therefore, concerning this third part we should note that the mode is essential and intrinsic to the copula. And the reason for this is that when such a determination is placed in the middle [of a proposition], then it is put there to determine the copula, which signifies the composition of the predicate with the subject and conversely; but a determination is posited together with what it is the determination of.

Again, otherwise the proposition 'Socrates is able not to run' would be affirmative, and this is false.[110]

Again, that such a mode is a part of the copula is argued for on the basis of the fact that Aristotle and the Commentator conceded that act and potency apply to all the categories, in the sense that every predicable term, in any category, can be predicated of a subject by the mediation of the copula 'is', which connotes actuality, or by the mediation of the phrase 'can be', which connotes potentiality, as in 'Socrates is a man' and in 'The Antichrist can be a man', or in 'A man is white' and in 'A man can be white', and so on with other terms. And thus in both cases, namely, both in the case of actuality and in the case of potentiality, we have the same subject and the same predicate, namely, 'white', whence the remainder is the copula, namely, 'is' in the assertoric proposition, and 'can be' in the possible proposition. But 'can be' [*potest esse*] is equivalent to 'is able to be' [*possibile est esse*].

Again, the same point is shown to be valid by conversions, in which the subject and the predicate must be the same, but 'Socrates can be a runner' is

110. In order to see that *Socratem possibile est non currere* (Socrates is able not to run), despite possible appearances to the contrary, is really negative, we have to explicate the copula implied in the verbal predicate. Then this sentence becomes *Socratem possibile est non esse currentem* (Socrates is able not to be running, or Socrates possibly is not something running), in which the copula is negative, for in the complex modal copula *esse* is first negated by *non,* and then it is modified by *possibile est.* By contrast, in *Socratem possibile est esse non currentem* (Socrates is able to be not-running, or Socrates possibly is something non-running) the copula is clearly affirmative, for here in the complex modal copula *esse* remains affirmative, and it is this affirmative *esse* that is modified by *possibile est.* The logical difference between the two constructions can be brought out in terms of "possible worlds semantics" by saying that although the first, the negative one, could be true even if Socrates did not exist in any possible world (i.e., if it were impossible for Socrates to exist), the second, affirmative construction would be true only if Socrates existed in some possible world (i.e., if it were possible for Socrates to exist) in which he would not be running. So although the second entails the possibility of Socrates' existence, the first does not (but it does not exclude it, either).

converted into 'A runner can be Socrates', in which 'runner' and 'Socrates' are the subjects, and consequently the remainder is the copula.

Furthermore, we should note that some modal propositions have a categorical copula, and such [copulas] are either necessary or impossible or possible, and some have a hypothetical copula, or a copula equivalent to a hypothetical copula, as in the case of propositions about contingency. For example, 'B is contingently A' is equipollent to 'B can be A and B can not-be A',[111] and consequently, it can be said to be an affirmative and negative about possibility. But a proposition about contingency with a negated mode can be said to be about necessity and impossibility disjunctively, for 'B is not contingently A' is equipollent to 'B has to be A or B cannot be A'. But there can be also other propositions with a hypothetical copula, as for example, 'B either necessarily or possibly is not A' and 'B either necessarily or impossibly is A'. And universally, in such cases the contradictory is formed by denying the copula, so that a conjunctive copula contradicts a disjunctive copula composed of the contradicting modes, just as with hypothetical propositions a conjunctive proposition contradicts a disjunctive composed of contradicting parts; for example, 'This can be and can not-be A' contradicts 'This cannot be or has to be A'. And the same should be said analogously of other cases.

1.8.4 On the quality of modals

> Concerning the quality of modals we should note that if there is only one negation in the proposition preceding the mode and the verb, then it renders the proposition negative, e.g., 'No man is able to be a donkey', or even 'For a man it is not possible to be a donkey'. Again, even if the negation follows the mode but precedes the verb 'to be', the proposition is still negative, e.g., 'A man is able not to be white'. But if there is no negation whatsoever, or there are two negations, then the proposition is affirmative, e.g., 'A man is able to run' or 'A man is not able not to run'.

The fourth part is clear enough, except that to some people it appears that the proposition 'A man is able not to run' should be called affirmative rather than negative, for just as a negation added to the predicate following the verb 'is' in an assertoric proposition, as in 'A man is a non-stone', does not render the proposition negative (indeed, this proposition is affirmative), so it seems

111. See 1.3.4 n. 63.

that in the case of modals, if the negation follows both the mode and the verb 'is', then it should not render the proposition negative, as is the case with 'A man is able not to be white'.

To this I reply that Aristotle took such propositions to be negative in bk. 1 of the *Prior Analytics,*[112] and they are in fact negative. This is clear in the first place from the fact that they are equipollent to genuine negatives, for the proposition 'A man is able not to be white' is equipollent to 'A man does not have to be white', which is obviously negative. Again, such a proposition can be true even if its subject supposits for nothing. For example, 'A chimera is able not to be white', is true because its equipollent, namely, 'A chimera does not have to be white', is obviously true; but since no affirmative is true in which the subject supposits for nothing, it follows that 'A chimera is able not to be white' is not affirmative.

Again, of contradictory categoricals one is affirmative and the other is negative; but, as we shall see later, the propositions 'Socrates is able not to run' and 'Socrates has to run' are contradictory, and the second is obviously affirmative, so the first is negative. And from this we infer the important corollary that in propositions such as 'B can be A' [*B potest esse A*] or 'B is able not to be A' [*B possibile est non esse A*] the verb '[to] be' belongs to the copula; this is because a negation affecting it, although not affecting that which precedes it, renders the proposition negative, for the proposition would not be negative unless the negation affected either the whole copula or some part of it.[113]

As for the authority of Aristotle in bk. 2 of *On Interpretation,*[114] when he says that 'is able not to be' is opposed to a negative, namely, 'is not able not to be', he means a qualified negation, namely, one affecting only the mode.

But again one may be in doubt concerning the quality of 'A man is unable to be a stone'. And I say that it is negative, for the word 'unable' implies a negation, for it is equivalent to 'not able', and it is a negating negation, just as is the negation included in the word 'nobody'; for the proposition 'B is unable to be A' is equivalent to 'B is not able to be A' and to 'B is necessarily not A', both of which are obviously negative.

112. Aristotle, *Prior Analytics* I.46.51b11 f.

113. It is the translation of this passage that necessitated the use of the construction 'able to be' in the role of the mode of possibility.

114. Aristotle, *On Interpretation* 12.21b33–35.

1.8.5 On the quantity of modals

(1) As far as the quantity of modals is concerned we should realize that their quantity can be considered in three ways: in one way, in respect of the subject, just as in the case of assertoric propositions; in the second way, in respect of the mode; and in the third way, in respect of both together. (2) In respect of the subject, I say that 'Every B is able to be A' is universal, and 'Some B is able to be A' is particular, and 'This B is able to be A' or 'Socrates is able to be running' is singular. (3) But in respect of the mode, 'necessary' and 'impossible' render the proposition universal with respect to the consignified time, whereas 'possible' ['able', 'possibly'] without a preceding negation renders it particular, as in 'A man is able to run' ['A man possibly runs'] or in 'A man is able not to run' ['A man possibly does not run'].

In the fifth part there are three sections: the first is a two-member division, the second is a clarification of the first member, and the third is a clarification of the second member. And the first section is clear on the basis of the subsequent sections. Also the second section is obvious by its analogy with assertoric propositions.

But concerning the third section we should note that the mode 'necessary' distributes the time consignified by the verb for all times. Therefore, if B has to be A, then it follows that some B always is, was, and will be A, and similarly, if every B has to be A, then it follows that every B always is, was, and will be A. And the same goes for 'impossible', whence 'B is unable to be A; therefore, some B never is, was, or will be A' is valid, and so is 'Every B is unable to be A; therefore, no B is, was, or will be A'. But the term 'possible' leaves that time undistributed; therefore it follows that if a B sometimes is, was, or will be A, then that B can be A.

We should note, however, lest someone object, that 'possible' is sometimes taken broadly, i.e., indifferently in relation to the past and the future, and so is 'necessary', as when we say that everything that either is, was, or will be is possible, or even when it simply does not imply a contradiction [to say] that it is, was, or will be. In this sense we would concede 'Aristotle can be' [*Aristoteles potest esse*]', or 'Aristotle is able to run', and we would deny 'Aristotle necessarily does not run'. In another sense it is taken to be restricted to the future, so that nothing is said to be possible to be, unless it either will be or at least it does not imply a contradiction [when we say] that it is or will be, in the sense in which it is said, in bk. 1 of *On the Heavens,* that there is no power [*potestas*] over the past.[115] For in this sense we would say that a horse

115. Aristotle, *On the Heavens* I.12.283b12–14.

that perished cannot be, and that it cannot walk, and that it is necessary that it is not, and in this sense we would also say that the proposition 'Aristotle walks' is impossible, whereas it, or a proposition similar to it, was true, and we would also say that the proposition 'Aristotle does not walk' is necessary, even if at some time it was false. Thus in this sense what was once possible becomes impossible and what was contingent becomes necessary. But in the present context I speak about necessity and impossibility broadly, for this is how we speak in the demonstrative sciences, although we speak differently in narrative stories.

From what has been said it is clear that some modal propositions can be absolutely universal, i.e., considering both the dictum[116] and the mode, as in 'Every B has to be A', some are absolutely particular, as in 'Some B is able to be A', and some are [both universal and particular] with qualification, namely, universal in some respect and particular in some other respect, in that they are universal considering the dictum and particular considering the mode or conversely. Furthermore, a singular, as far as the dictum is concerned, can be universal or particular with regard to the mode.

But as far as 'contingent' is concerned, we should realize that sometimes 'contingent' is taken broadly, and then it is synonymous with 'possible', and sometimes it is taken strictly, and this we call 'contingent both ways' [*contingens ad utrumlibet*], and then it is a species of 'possible' distinguished from 'necessary'. For 'possible' is common to both 'necessary' and 'contingent', because everything necessary is able to be and is never able not to be, and everything contingent is able to be and is also able not to be. But for now we omit the consideration of 'contingent', as also that of 'true' and 'false', for propositions with these modes do not properly have oppositions and equipollences in relation to the propositions of other modes. Therefore we shall now discuss the oppositions and equipollences of propositions involving 'possible', 'impossible', and 'necessary'.

116. The *dictum* of a modal proposition is what remains if we take away the mode. The dictum corresponds to a categorical proposition, and it is the quantity of that categorical which is attributed to the dictum of a modal proposition. For example, in 'Every man can think', the dictum is 'Every man . . . think', which corresponds to the categorical proposition 'Every man thinks', which is universal, whence so is the dictum of the previous modal proposition. Since the modal proposition is about possibility, however, in accordance with Buridan's present considerations it is particular with respect to its mode.

1.8.6 On the oppositions of modals

(1) As far as the oppositions of these modals are concerned, then, the following rules can be formulated. The first is that singulars having the same subjects and predicates that differ in their quality and in the quantity of their mode are contradictories. But if such singulars of diverse quality both have universal modes, then they share in the law of contraries, and if they both have particular modes then they share in the law of subcontraries. And if they are of the same quality and the one is universal in its mode and the other is particular, then they share in the law of subalterns. (2) The second rule is that if two propositions having the same subject and the same predicate happen to be of diverse quality and quantity in both the mode and the dictum, then they are contradictories. But if they are of diverse quality, but are similar in mode and dictum, and they are equally particular or universal, then they are disparate. (3) The third rule is that if such propositions of diverse quality are both universal, both in mode and in dictum, then they are contraries. (4) The fourth rule is that if such propositions of diverse quality are the two of them particular both in mode and in dictum, then they are subcontraries. (5) The fifth rule is that if such propositions are of the same quality and one of them is universal in both ways and the other is particular in both ways, then they are subalterns. But if one of them has a universal subject and a particular mode and the other is constructed conversely, then they are disparate. By these five rules we have ten subalternations, five contrarieties and five subcontrarieties, four contradictions and four disparities; and thus there are twenty-eight combinations.

The sixth part contains five rules. The first rule is about singular propositions, and it is clear, since, as far as contradiction is concerned, the same applies here as what was said concerning assertoric propositions. For it is necessary that contradictories differ in quality and that whichever term is distributed in the one is not distributed in the other, and conversely. But a singular term, since it receives neither universality nor particularity, nor distribution, has to remain in its singularity; but the quantity of the mode has to be different, for the mode is sometimes universal and sometimes particular, as are 'necessary' and 'possible', respectively.

But we should also add that when the predicate is a common term its quantity also has to be changed. But this was not added in the text, for it is always changed anyway in accordance with general usage by virtue of the negation preceding it. Therefore, the following are contradictories: 'Socrates has to be an animal' and 'Socrates is able not to be an animal'; and so are the following two: 'Socrates is unable to be an animal' and 'Socrates is able to be an ani-

mal'. But the following two are not contradictories: 'Saturn has to be a planet' [*Saturnum necesse est esse planetam*] and 'Regarding Saturn it is necessary that a planet is not it' [*Saturnum necesse est planetam non esse*]; for they are both true at the same time, since the term 'planet' is not distributed in either of them.[117]

Furthermore, it is also clear that 'This A has to be B' and 'This A is unable to be B' obey the law of contraries, for they cannot both be true at the same time, but they can both be false at the same time in contingent matter, e.g., 'Socrates has to run' [*Socratem necesse est currere*—'For Socrates it is necessary to run'] and 'Socrates is unable to run' [*Socratem impossibile est currere*—'For Socrates it is impossible to run'].[118] But those with a particular mode obey the law of subcontraries, for they cannot both be false at the same time, but they can well be true at the same time, as in the cases of 'Socrates is able to run' and 'Socrates is able not to run'.

But then concerning the four subsequent rules we should note in advance that by combining and varying the universality and particularity of the dictum and the mode of modal propositions, namely, of possible, necessary, and impossible propositions with a common subject, we can get eight modal prop-

117. *Saturnum necesse est planetam non esse*—'For Saturn it is necessary that a planet is not it'. This can be analyzed further as: 'Saturn is such that under any possible circumstances some planet is not identical with it', which can be true if we assume that in any possible situation ("possible world") in which Saturn exists, another planet also exists. But this is obviously compatible with what the truth of the other proposition (*Saturnum necesse est esse planetam* [Saturn has to be a planet]) requires, namely, that Saturn should be a planet in all possible situations (in which it exists). What would be incompatible with this proposition would be 'For Saturn it is necessary not to be a planet' *(Saturnum necesse est non esse planetam),* in which 'planet' is distributed, so the truth of this proposition would require that in all possible situations Saturn is not identical with any planet.

118. Let us not forget that 'has to' and 'unable' are used to render *necesse* and *impossibile,* so the former is supposed to express necessity and the latter impossibility. (On the other hand, their use was necessitated by Buridan's *syntactical* considerations concerning modal copulas and their negations.) Therefore, despite the colloquial connotations of these English phrases, according to which it might seem possible that Socrates both has to and is unable to run (in the sense, e.g., that he has an obligation to run but lacks the power to do so), in the intended sense these two sentences are indeed incompatible. For in the intended sense 'Socrates has to run' should mean that it is absolutely necessary that Socrates run, i.e., in any possible situation (in which Socrates exists) he runs. But with this claim it is indeed incompatible that it is impossible for him to run (the intended sense of 'unable' here), that is to say, that in any possible situation (in which he exists) he does not run. See 1.8.2 n. 101. By the way, this type of explanation of modalities, namely, as quantifiers over possible situations, besides matching contemporary treatment of the modal operators, may also serve to explicate Buridan's intuition that a necessary proposition has a certain type of universal import, whereas a possible proposition has a particular one.

ositions, in accordance with which in figure [5] we see eight vertices. For every proposition with such modes is either negative or affirmative; if affirmative, then we have four cases: it is either universal or particular both in mode and in dictum, or it is universal in dictum and particular in mode, or conversely; and thus here we shall have four propositions. Similarly we shall have four propositions, if they are negatives. Furthermore, each of these propositions has eight equivalent propositions, as we shall see later.

Having seen this, we should know that there are twenty-eight combinations of these eight propositions, the oppositions of which in accordance with the laws of opposition are easy to see. For any two propositions are either of the same or of diverse quality. If they are of the same quality, then they are subalterns in accordance with the law [of subalterns], unless one of them has a universal dictum and a particular mode and the other is constructed conversely, for then they are disparate. If they are of diverse quality then they have either more universality, and then they are contraries, in accordance with the law, or they have more particularity, and then they are subcontraries, again, in accordance with the law, or they have equal [universality and particularity], and then they are contradictories, unless they have similar dicta, in which case they are disparate, and do not stand in any relation of opposition. And so we have ten subalternations, five contrarieties, five subcontrarieties, four contradictions, and four disparities, which obey no law [of opposition]. And thus clearly there are twenty-eight combinations, which even more plainly and manifestly are visible to anyone who takes a careful look at figure [5].

When all this has been seen, then the second rule, which is about contradictories with common terms, is obvious in view of the rule given elsewhere concerning contradictories, namely, that they have to be of diverse quality, and whatever is distributed in the one has to be nondistributed in the other and conversely. Thus the following are contradictories: 'Every B has to be A' and 'Some B is able not to be A', or also, if the modes are conversely related, the following are likewise contradictories: 'Every B is able to be A' and 'Some B is unable to be A'. So we should note that a contradiction is an opposition that does not have an intermediary, as is said in chap. 2 of bk. 1 of the *Posterior Analytics,* and as is discussed in bk. 4 of the *Metaphysics.*[119] And thus a contradiction is indivisible in the sense that it is not possible so to diminish a perfect contradiction that it would be possible either for both propositions to be true or for both propositions to be false at the same time without abandoning the law of contradiction.

The third rule is clear, for contraries properly so-called should be maxi-

119. Aristotle, *Posterior Analytics* I.2.72a12; *Metaphysics* IV.7.1011b24–26.

mally distant; therefore the whole should be totally affirmed in the one and the whole totally negated in the other, both in respect of the mode and in respect of the terms. Therefore, the following are contraries: 'Every B has to be A' [*Omne B necesse est esse A*] and 'Every B is unable to be A' [*Omne B impossibile est esse A*].

We should note, however, that there are still four combinations that are not so strictly contraries, but that, nevertheless, approximate contraries in that they still obey the law of contraries. For example, if both propositions are universal in the dictum and one of them is universal also in the mode but the other is particular, then it turns out that they cannot both be true but can both be false, at the same time, as are 'Every planet has to be in the sky' [*Omnem planetam necesse est esse in caelo*—'For every planet it is necessary to be in the sky'] and 'Every planet is able not to be in the sky' [*Omnem planetam possibile est non esse in caelo*—'For every planet it is impossible to be in the sky'].[120] The case is similar if both are universal in the mode and one of them is universal and the other is particular in the dictum, for example, 'Every man has to stay awake' [*Omnem hominem necesse est vigilare*—'For every man it is necessary to stay awake'] and 'Some man is unable to stay awake' [*Quendam hominem impossibile est vigilare*—'For some man it is impossible to stay awake'].[121] For in these cases it is clear that they move *away* from contradiction *toward* contrariety, because of the universality of the modes or dicta in both. Therefore, they cannot be simultaneously true, since they can be true neither on the ground that they share in contradiction, nor on the ground that they approach contrariety, for this would be incompatible both with contrariety and contradiction; however, they can simultaneously be false, for they cannot hold on to the law of contradiction, because of their departing from contradiction.

The fourth rule is also clear: for propositions are most properly subcontraries that come under the contraries both with respect to the dictum and with respect to the mode, and this is so when they are particular in both fashions, as are 'Some B is able to be A' and 'Some B is able not to be A'.

But we should note, analogously with what was noted concerning con-

120. The propositions 'For every planet it is necessary to be in the sky' and 'For every planet it is impossible to be in the sky' are indeed incompatible, because the truth of the first requires that every planet be such that in every possible situation it is in the sky, whereas the truth of the second requires that every planet be such that in every possible situation it is not in the sky. But they both can be false, if some planets in some possible situations are in the sky and some are not. See 1.8.6. n 118.

121. The propositions 'For every man it is necessary to stay awake' and 'For some man it is impossible to stay awake' cannot be true at the same time, for the first requires that every man in every possible situation stay awake, whereas the second requires that some man in no possible situation stay awake. See 1.8.6 n. 118.

traries, that there are four more combinations, which are not so properly subcontraries but which obey the law of subcontraries, namely, that they cannot both be false at the same time, but they can both be true at the same time. For example, if both are particular in the dictum, and one of them is universal and the other is particular in the mode, as are 'Some being is necessarily God' and 'Some being is necessarily not God', or 'Some being is unable to be God' and 'Some being is able to be God'. The situation is similar if both are particular in the mode and one of them is universal and the other is particular in the dictum, as are 'Every man is able to stay awake' and 'Some man is able not to stay awake' or 'Every man is able not to stay awake' and 'Some man is able to stay awake'. For it is obvious that these move away from contradiction towards subcontrariety, because of the dominance of particularity in both, and thus they cannot both be false at the same time, for they share only in contradiction and subcontrariety, and neither contradictories nor subcontraries can be false at the same time, but they can both be true at the same time, because of their moving away from contradiction.

But there still remains a difficulty as to how two propositions of diverse quality, one of which is universal in the dictum and particular in the mode as also is the other, are related to each other, as for example, 'Every B is able to be A' and 'Every B is able not to be A', or if they both are particular in the dictum and universal in the mode, as are 'Some B has to be A' and 'Some B is unable to be A'. And it appears to me that these are as it were disparate, obeying no law, neither the law of contradictories, nor the law of contraries, nor the law of subcontraries, nor that of subalterns, for such propositions can be true at the same time, because of their approaching subcontrariety on one part, and they can both be false at the same time, because of their approaching contrariety, on the other part; and since they are of diverse quality, while having the same subject and predicate, it is impossible that one should follow from the other, and since the one seems to share something from contradiction, the one can be true, while the other is false. I have discussed these points amply elsewhere, in the questions on bk. 2 of *On Interpretation*.[122]

Similarly, as to the fifth rule, we should say that although propositions that are of the same quality are most properly subalterns, given that one of them is universal in both ways, namely, both in the mode and in the dictum, and the other is particular in both ways, as are 'Every B has to be A' and 'Some B is able to be A', nevertheless, there are still eight more subalternations, namely, four affirmative and four negative ones that retain the law of subalterns, which applies if one is universal in both the mode and the dictum, and the other is universal in one way and particular in the other; for the latter follow from the

122. Buridan, *Questiones longe super librum Perihermeneias,* bk. 2, q. 9, q. 11.

former. And the case is similar if one of them is particular in both ways and the other is universal in one way and particular in the other way; for it is clear that such propositions move away from equipollence, because of the diverse quantity of the dicta or of the modes, but they move only toward subalternation, whence they assume the law of subalterns, and the more particular follows from the more universal, but not conversely.

But if the one is universal in the dictum and particular in the mode, and the other conversely, then they will be as it were disparate, neither formally incompatible nor the one implying the other. And since they are of the same quality, they can both be true and both be false at the same time; therefore, they are neither contradictories, nor contraries, nor subcontraries. But neither can the one follow from the other, because the universal cannot follow from the particular, whether with respect to the mode or with respect to the dictum; whence neither the one with the universal subject follows from the other, nor the one with the universal mode follows from the other. So they are not subalterns either, but rather totally disparate, just as if they had different subjects and different predicates, unless they could be called subalterns in some respect, namely, because the one is subaltern with respect to the subject, or the dictum, and the other with respect to the mode.

1.8.7 On the equipollences of modals

(1) Concerning the equipollences of modal propositions we give the following rules. The first is that equipollent modal propositions always have to be of the same quality and of the same quantity. (2) The second is that in the dictum equipollences are to be formulated as in assertoric propositions. (3) The third is that if we treat modes analogously with signs, namely, so that 'necessary' is treated like 'every', 'impossible' like 'no', 'possible' like 'some', and 'possible . . . not' like 'some . . . not', then a negation placed after the mode makes it equipollent to its contrary; placed before, it makes it equipollent to its contradictory; and placed both before and after, it makes it equipollent to its subaltern.[123] The oppositions and equipollences are clear to anyone who carefully studies figure [6].

123. What Buridan states here is effectively the gist of the idea of modern possible-worlds semantics, which treats the intensional modal notions analogously to the extensional notions of the quantifiers, in fact treating them as quantifiers over possible worlds or situations. Thus, if s is a variable ranging over possible situations that can serve as indices to formulas, then

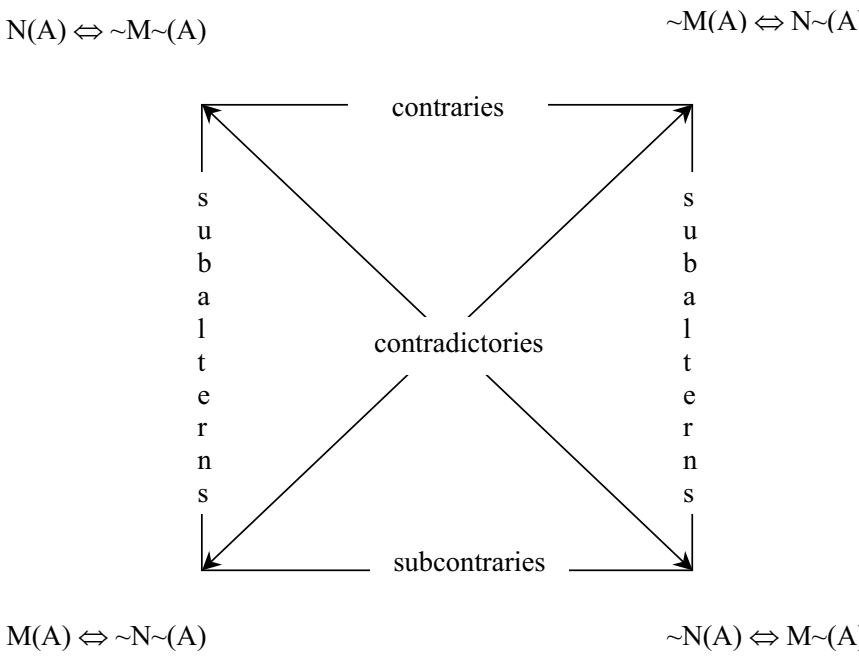

Fig. 6. The "Modal Square of Opposition." A schematic representation of the relations between modes and their negations using 'M' for 'possible', '~M' for 'impossible', and 'N' for 'necessary."

The seventh part contains three rules, the first of which is obvious in itself, not only where the modals discussed here are concerned, but generally in relation to all propositions, be they assertoric or modal, excluding, however, contingent propositions, which will be considered later.

The second rule is clear. For retaining the same mode, 'every . . . not' is equipollent to 'no' and so are 'no . . . not' and 'every'. For example, 'Every B is not necessarily A' is equivalent to 'No B is necessarily A', and similarly, 'No B is not necessarily A' is equivalent to 'Every B is necessarily A'. Similarly, 'not every' is tantamount to 'some . . . not' and 'Not no' is equivalent to 'some'; for example, 'Not every B is necessarily A' is equivalent to 'Some B is not necessarily A', and similarly, 'Not no B is necessarily A' is equivalent to 'Some B is necessarily A'. In the same way, 'not every . . . not' is equivalent to 'some',

'necessary', 'N', can indeed be replaced everywhere by '∀s', and 'possible', 'M', by '∃s', according to the following rule: if A is a formula, then 'M(A)', 'N(A)', '∃s[A]s', and '∀s[A]s' are also formulae, and 'N(A)' ⇔ '∀s[A]s', and 'M(A)' ⇔ '∃s[A]s'. From this, the equipollences Buridan states in the text trivially follow on the basis of the definitional rule familiar from quantification theory: '∃x'$=_{df}$'∼∀x∼'.

and similarly 'not no . . . not' is to 'some . . . not'; for example, the following two propositions are equipollent: 'Not every man is not necessarily an animal' and 'Some man is necessarily an animal', and so are the following two: 'Not no man is not necessarily an animal' and 'Some man is not necessarily an animal'.

But once again, in relation to the third rule we have to stress that in formulating an equipollence in the modes it is necessary to ensure that the quantity of the dicta remains the same. For example, in virtue of the negation placed after the mode the following are equipollent: 'Every B has to be A' and 'Every B is unable not to be A'; and so are 'Every B is unable to be A' and 'Every B is necessarily not A'. And the same would be the case if the dictum were particular, as in 'Some B has to be A' and 'Some B is unable not to be A'. Similarly, in virtue of the negation placed before [the mode] the following are equipollent 'Every B has to be A' and 'Every B is not able not to be A', or even 'No B has to be A' and 'No B is not able not to be A'. The same goes for the particular sign, as in 'Some B has to be A' and 'Some B is not able not to be A'. And similarly with 'impossible' and 'possible'. For 'not impossible' is equivalent to 'possible', and 'not possible' is equivalent 'to 'impossible', the dictum being retained in the same form. Likewise with a negation placed before and after [the mode], 'not necessary . . . not' is equipollent to 'possible', other elements remaining the same, and the same goes for 'not possible . . . not' and 'necessary'. Finally, on the basis of all this we should note that equipollences both in the mode and in the dictum can be combined, resulting in figure [5].

1.8.8 On the conversions of modals

(1) As to the conversions of the aforementioned modal propositions, we should know that the modes 'possible', 'impossible', 'contingent', and 'necessary' ampliate the subjects of propositions to supposit not only for things that there are, but also for those that can be, so that the sense of the proposition 'B can be A' is 'What is or can be B can be A', and similarly, saying 'B has to be A' is equivalent to saying 'What is B or can be B has to be A'. (2) From these we conclude that the corollary 'An old man can be a boy' is true, for what can be an old man can be a boy, as in the case of the Antichrist, and similarly, 'The creator is necessarily God' is true, even assuming that God did not create, for it is equivalent to 'What is or can be the creator is necessarily God'. (3) Hence now we lay down four rules about the conversions of the aforementioned modals. The first

is that every affirmative proposition about possibility can be converted into an affirmative particular, and thus a particular is converted simply and a universal accidentally, as 'Every/Some B can be A; therefore, some A can be B'. (4) The second rule is that no negative proposition about possibility is converted, for then falsity would follow from truth, as in 'Every/Some God is able not to be creating; therefore, something creating is able not to be God'; for the first [proposition] is true, and the second is false. (5) The third rule is that every universal negative about necessity is converted into another universal negative about necessity, as with 'Every B is necessarily not A; therefore, every A is necessarily not B'. But a particular negative is not converted, for then falsity would follow from truth, as with 'Some being is necessarily not God; therefore, some God is necessarily not a being'. (6) The fourth rule is that no affirmative about necessity is converted into another [proposition] about necessity, but is validly converted into one about possibility.

The eighth principal part of this chapter is large; it contains six sizable subparts or sections, namely, one notable point, one corollary, and four rules.

The notable point, put forth in the first subdivision, is quite easily accepted with regard to 'possible' and 'contingent'. For the Antichrist is able to be, and the Antichrist happens to be;[124] however, such affirmatives would not be true unless their subject supposited for something, but it does not supposit for something which is, for the Antichrist is not; therefore it is sufficient that it supposits for something that can be. But then, if this is conceded with regard to 'possible', then it has to be conceded with regard to 'impossible'; for 'The Antichrist is able to be' contradicts 'The Antichrist is unable to be', and in contradictories the terms have to supposit with equal ampliation and equal restriction, if they supposit for some thing or some things. But then the same has to be conceded with regard to 'necessary' as well, for otherwise there would be no equipollences between propositions about necessity, possibility, and impossibility.

Concerning the corollary concluded in the second subpart, we should realize that sometimes some people conventionally restrict the subject in propositions about possibility or necessity to supposit only for things that actually exist. And in this way 'An old man can be a boy' would be taken to be false, or even 'The creator is necessarily God', supposing that God is creating nothing

124. Concerning the terminology see again 1.8.2 n. 101. The point of the example is that the Antichrist does not yet exist, still, he will, as is revealed. But then he can exist (for if he could not exist, then he would not exist in the future), and thus also contingently exists, on the basis of the definition of 'is contingently' or 'happens to be', namely, 'can be and can not-be' (for he is not, whence he can not-be, and he will be, whence he can be).

now; indeed, [in this way] even 'The Antichrist can be' or 'The Antichrist can be generated' would be false. But it is obvious that this mode of restriction does not derive from the proper meaning of these phrases, so, on the basis of proper meaning [*de proprietate sermonis*], that corollary is simply to be conceded.

Next, the first rule, which is laid down in the third subpart, can be proved by an expository syllogism. For the proposition 'B can be A', in accordance with what has been said above, is equivalent to 'What is or can be B can be A'; therefore, if something that can be B can be A, let us designate that something by the proper name C; then [we can argue] thus: 'C can be B and the same C can be A; therefore, what can be A can be B', from which it follows that A can be B; therefore, from the first to the last, 'B can be A; therefore A can be B' is valid.

Furthermore, before I advance to the second rule, we should note that throughout the present eighth part I call a proposition 'a proposition about possibility' only if the mode 'possible' [or 'able', 'possibly', or 'can'] occurs in it without a preceding negation, or if it is a proposition equivalent to such a proposition. For example, the following propositions I call 'propositions about possibility': 'B is able to be A' and 'B is able not to be A'. And, similarly, the following I call 'a proposition about necessity': 'B has to be A', 'B has not to be A', and the following I call 'a proposition about impossibility': 'B cannot be A' and 'B cannot not be A'. But the proposition 'B is not able to be A' I do not call 'a proposition about possibility' but 'a proposition about impossibility', because it is equivalent to 'B cannot be A'; similarly, the proposition 'B is not able not to be A' I do not call 'a proposition about possibility' but 'a proposition about necessity', because it is equivalent to 'B has to be A'. And the same applies in their own way to propositions 'about necessity' and 'about impossibility'.

But then the second rule, which is put forth in the fourth subpart, becomes obvious. For the following are negatives about possibility: 'Every B is able not to be A' and 'Some B is able not to be A', but they are not converted into 'A is able not to be B', for then falsity would follow from truth, as with 'Every God is able not to be creating; therefore, something creating is able not to be God', since the first is true, and the second is false.[125]

The third rule, which is posited in the fifth subpart, contains two sections, the last of which is that a particular negative is not converted; and it is clearly proved in the text. But the first section is that a universal negative about necessity is converted simply. And this is proved as follows: universal negatives

125. This is because only God can be creating (i.e., nothing other than God can be creating), so anything creating is necessarily God.

about necessity contradict particular affirmatives about possibility; whereas particular affirmatives about possibility follow from, and are converted into, each other, as has been said; therefore, likewise their aforementioned contradictories follow from, and are converted into, each other; and this consequence is valid by virtue of the rule: 'If the antecedent implies the consequent, then the contradictory of the consequent implies the contradictory of the antecedent'; whence if the former mutually imply each other, then so also must the latter.[126]

The fourth rule contains two sections. The first states that no affirmative about necessity is converted into another proposition about necessity; and the reason is that otherwise falsity would follow from truth, as in saying: 'Everything creating has to be God; therefore God has to be creating'; for the first is true, and the second is false.

The second section states that affirmatives about necessity are validly converted into affirmatives about possibility. This is proved thus: the proposition about necessity implies the proposition about possibility, by subalternation, and this one about possibility implies the other one about possibility, by conversion; therefore, from the first to the last, the one about necessity implies the other about possibility by conversion, thus: 'Every B has to be A; therefore, some A is able to be B'.[127]

Next, we should note that if we have conversions about necessity and possibility, then we have to have conversions about impossibility, for 'impossible to be' is equivalent to 'necessary not to be', and 'impossible not to be' is equivalent to 'necessary to be', which we have already discussed. Similarly, since we have conversions involving the aforementioned modes without placing a negation before the mode, it follows that we also have them even placing a negation before the mode, for 'not possible' is equivalent to 'impossible' and 'not impossible' is equivalent to 'possible'; similarly, 'not necessary to be' is equivalent to 'possible not to be', and 'not necessary not to be' is equivalent to 'possible to be'.

Finally, we should note that the aforementioned propositions are converted also in another way, less properly, by means of the name 'what' [or 'that'].[128] For example: 'B can be A; therefore, what can be A is or can be B', and similarly, 'No B can be A; therefore, nothing that is or can be A is or can be B';

126. In modern notation this would be: $(p \rightarrow q) \leftrightarrow (\sim q \rightarrow \sim p)$ and so $(p \leftrightarrow q) \leftrightarrow (\sim q \leftrightarrow \sim p)$.

127. Of course, in the intended senses this would be: 'Every B is necessarily A; therefore, some A is possibly B'.

128. Pronouns also fall under Buridan's broad concept of 'name' *(nomen).* In this context the single Latin pronoun *quod* will have to be rendered by both English pronouns given in the text.

again, 'B has to be A; therefore, what has to be A is or can be B' and similarly 'No B has to be A; therefore, nothing that has to be A is or can be B'. But the following negatives are not converted in this way: 'Every B has not to be A' and similarly 'Every B is able not to be A'; for the sake of brevity I omit the reasons for this, but anyone who wishes to do so may look into them.

1.8.9 On composite modals

1.8.9.1 ON COMPOSITE MODALS IN GENERAL

> Now something has to be said about the propositions called 'composite modals'. And we should note that a proposition is usually called a "composite modal' in which the mode is predicated of the dictum, or the dictum of the mode, as in 'That a man runs is possible' or 'It is possible that a man runs',[129] or even 'That a man runs is necessary' or 'It is necessary that a man runs'; and thus with 'impossible', or 'contingent', or with 'true' and 'false'.

The ninth part is large, so it can be divided into four subparts, the first of which describes propositions called 'composite modals', the second discusses the equivocation of the subjects and predicates of such propositions, the third discusses their quality and quantity, and the fourth their conversions.

Concerning the first subpart we should note that these modes are not taken here to belong to the copula, but what are called 'modes' here are terms by which we appropriately characterize [kinds of] propositions as different from each other, e.g., that some are true, some are false, some are possible, some are impossible, some necessary, and some contingent, some *per se,* some *per accidens,* or immediate, or 'with respect to what the thing is' [*secundum quod ipsum*], or affirmative, or negative, or universal, or particular, or indefinite, or singular, reduplicative, exceptive, and so forth. Therefore, all such terms, if they are subjects or predicates with respect to the term 'proposition', or with respect to another term appropriately suppositing for a proposition or propositions, then they render the propositions [in which they occur] ones called 'composite modals', e.g.: 'Every proposition is true', 'No proposition is nec-

129. Note that the corresponding Latin sentence *(Possibile est hominem currere)* exhibits an ordinary subject-copula-predicate structure, which, bending the rules of English syntax, could be rendered by '[Something] possible is that a man runs', or, perhaps more smoothly, by 'A possibility is that a man runs'.

essary', 'That a man runs is contingent', 'That God is not is impossible', 'That the sun is greater than the earth is known', or 'opined', or 'doubted', and so on for the other cases.

And we should note that although everybody calls such propositions 'composite modals', nevertheless, they are in fact assertoric [*de inesse*]. For if I say 'A proposition is true', or 'A proposition is necessary', or even 'That God does not exist is impossible' or 'That a man is an animal is known by you', in all these one predicate is predicated of one subject by the mediation of the verb 'is', unmodified. Nor is it clear why the proposition 'A proposition is true' should be modal rather than the proposition 'A rational animal is white'. And if I say 'That a man runs is possible', this amounts to just the same as if I said "The proposition 'A man runs' is possible," and this latter is not modal, nor is it any less assertoric than "The term 'man' is a species." But since names signify by convention [*ad placitum*], we can also use the usual manner of speaking, so that we shall call such propositions modals, although in this way we do not take 'modal proposition' in the sense in which it is distinguished from 'assertoric proposition'; for in this way 'white' is a mode of 'man', if I say 'white man', as also is 'possible' or 'false' a mode of 'proposition', if I say 'possible proposition' or 'false proposition'.

1.8.9.2 ON THE EQUIVOCATION OF THE SUBJECTS AND PREDICATES OF COMPOSITE MODALS

(1) Concerning such modal propositions we should note that the "that-clause"[130] (such as 'that a man runs') put in these propositions, which is usually called dictum, is sometimes taken in material supposition, and then it supposits for some proposition (as 'that a man runs' supposits for a proposition 'A man runs'), and sometimes it is taken significatively, and then, if it supposits for something, then it supposits for the thing for which the subject of the dictum would supposit, when determined by such a determination (as 'that a man runs' supposits for a running man and 'that a man is white' supposits for a white man). (2) Similarly, the terms 'possible', 'necessary', and 'contingent' sometimes are understood as the common differences of beings. In this sense every being is either

130. Buridan here is talking about accusative with infinitive constructions, but I had to modify his remarks to meet the demands of English syntax. See the introduction for details.

necessary or contingent; thus it is necessary, if it is impossible for it not to be, as in the case of God, and it is contingent, if it can not-be, as with this horse, and in this sense no proposition is necessary, but every proposition is contingent. In another sense [these terms] are taken as differences appropriate to propositions; and in this sense a donkey is not said to be either possible, impossible, necessary, or contingent, but 'necessary' [in this sense] is described as 'a proposition signifying in the way it is necessary for things to be', and 'impossible' as 'proposition signifying in the way it is impossible for things to be'.

The second subdivision of the ninth principal part of this chapter contains two distinctions, which have been quite clearly stated in the text, except that the descriptions of 'necessary' and 'impossible' given at the end are not formulated in proper terms. For in the treatise on *Sophismata* we declared that a true proposition is not true because things are in reality as the proposition signifies [*ita est in re*], whence neither is it said to be necessary because it is necessary for things to be in reality as the proposition signifies [*ita necesse est esse*]. But properly speaking the causes of truth have to be assigned differently for different propositions, as was stated there.[131] Nevertheless, we use this manner of speaking by convention [*ad placitum*], understanding by it the true formulations of the causes of truth of diverse propositions, in accordance with the diversity of these propositions.

1.8.9.3 ON THE QUALITY OF COMPOSITE MODALS

(1) About the quality of these propositions we should say, just as was said about the others, that if the negation affects the copula, then the proposition is negative, and if not, then it is affirmative. (2) Similarly, as regards their quantity: if the subject is distributed, then the proposition is universal; if it is without distribution and without a sign, then it is indefinite; if with a particular sign, then it is particular; and if it is with the demonstrative pronoun 'this', then it is singular.

The third subdivision of the ninth part contains two sections, one about the quality of such propositions, and another about their quantity.

And one would ask about the quality and quantity of many propositions

131. See *Sophismata,* chap. 2, Fourteenth conclusion.

[that are relevant here]; first, about 'Man is [a] species' [*Homo est species*]; [132] second, about 'Not [a] man is a species' [*Non homo est species*];[133] third, about 'That every man runs is possible' [*Omnem hominem currere est possibile*]; fourth, about 'That no man runs is possible' [*Nullum hominem currere est possibile*]; fifth, 'That not [a] man runs is possible' [*Non hominem currere est possibile*];[134] sixth, about 'It is impossible that a man is a donkey' [*Impossibile est hominem esse asinum*]; seventh, about 'It is not possible that a man is a donkey' [*Non possibile est hominem esse asinum*].

I say that if we wanted to respond to all of these [questions] on the basis of the proper meaning of these phrases [*de proprietate sermonis*], then we would respond taking everything significatively, and then it would be easy to say [of what quality and quantity these are]. For in this way '[A] man is a species' [*Homo est species*] is indefinite, affirmative, and false.[135] But if in 'Not [a] man is a species' [*Non homo est species*], the word 'not' affects the whole proposition[136], then it is a universal negative, being equivalent to 'No man is a species', and is true. Next, the proposition 'That every man runs is possible' is equivalent to 'Every running man is possible',[137] and it is a universal affirmative, and is true. Similarly, 'That no man runs is possible' is equivalent to 'No running man is possible', and [thus] it is a universal negative, and is false. But the proposition 'That not [a] man runs is possible' is equivalent to 'No running man is possible' if the negation is negating, and it is then a universal negative and is false; but if the negation only infinitizes the subject,[138] then it is equivalent to the proposition with an infinite subject 'A non-man running is possible', which is an indefinite affirmative, and is true, for a donkey, which is a non-man, running, is possible. But concerning 'It is impossible that a man is a donkey' we should say that 'impossible' is equivalent to 'not pos-

132. The Latin sentence exhibits an ambiguity that will be discussed below.

133. The Latin sentence exhibits an ambiguity that cannot be indicated by the English construction. See the discussion below.

134. The Latin sentence exhibits an ambiguity that cannot be quite clearly indicated even by this somewhat awkward English construction. See the discussion below.

135. For then 'man' has to stand for individual humans, and not for (the instances of) the concept of humans or for (the instances of) the term 'man'. In that case, however, English syntax demands the use of an indefinite article, which immediately indicates this type of supposition. This is why the type of ambiguity present in the Latin *Homo est species* (either 'Man is a species' or 'A man is a species') cannot be reproduced in English.

136. That is, in a smoother translation, *Non homo est species* is taken to mean 'It is not the case that a man is a species'.

137. See 1.8.9.2.

138. That is, *Non hominem currere est possibile* is taken to mean, in a smoother translation, 'That a non-man runs is possible' or 'It is possible that a non-man runs'.

sible'; and then the negation implicit in the term 'impossible' is either understood to be negating[139], in which case the proposition is equivalent to 'No possible [thing] is that a man is a donkey'[140], which is a universal negative, or the negation only infinitizes the subject 'possible'[141], and then the proposition is an indefinite affirmative.

Next, we should say that if the subjects in the aforesaid propositions suppose materially, then the proposition "[A] 'man' is a species" [*Homo est species*] is affirmative (of which there is no doubt), and is indefinite, for the term 'man' is not to be understood as supposing only for itself, but indifferently for other similar terms as well, as if we said "This term 'man' or a term like 'man' is a species."[142] And in this way "Every 'man' is a species" would be universal, and "Some 'man' is a species," i.e., "Some term 'man' is a species" would be particular, and "This 'man' is a species," i.e., "This term 'man' is a species," would be singular.

It is true that some people take propositions such as 'Man is a species', 'Animal is a genus', 'Love is a verb', etc. to be singulars, in which the subjects supposit materially. For they say that 'Man is a species' in material supposition is equivalent to 'This term 'man' is a species'. But I do not believe this to be true, for Porphyry as well as Aristotle take the propositions 'Man is a species' and 'Animal is a genus' to be knowable and demonstrable insofar as the subjects supposit materially, which would not be the case were singular propositions in question. For if, pointing to a spoken or written term, I say 'This term is a species', then, although this proposition is true, nevertheless, it will immediately become false when [that term] ceases to exist, and thus such a proposition would not be knowable.[143] Again, in saying 'That a man runs is possible', the subject 'That a man runs' does not supposit for itself but for a proposition such as 'A man runs'; and whoever may utter such a proposition, there is no greater reason for it to supposit for the one uttered by Socrates than for the one uttered by Plato; therefore it supposits indifferently

139. That is, the sentence *Impossibile est hominem esse asinum* is understood as 'It is not a possible [thing] *that a man is a donkey*' or *'That a man is a donkey* is not a possible thing'.

140. That is, in accordance with Buridan's theory of the personal supposition of dicta (see 1.8.9.2) this proposition is true because no possible thing is a man who is a donkey.

141. That is, the sentence *Impossibile est hominem esse asinum* is understood as 'It is a non-possible (thing) that a man is a donkey'.

142. That is to say, the subject term of *Homo est species* is understood as supposing for itself and for every other similar individual inscription (every other "token-word" of the same type, to use modern terminology), i.e., it also supposits for this: *homo.*

143. Concerning the impossibility of knowing singular propositions in the strict sense of demonstrative knowledge see 8.7.5; 8.7.9.

for any of such propositions without distribution, and thus indefinitely. And we should picture the situation in the same way with "A 'man' is a species" [*Homo est species*], for the term 'man' does not supposit only for itself, unless it is pointed out by means of the pronoun 'this', but it supposits indifferently for such terms indefinitely.

But concerning 'Not man is a species' [*Non homo est species*] we should say that if the whole phrase 'not man' [*non homo*] supposits materially,[144] then the proposition is indefinite and affirmative, and its sense is that an infinite term similar in form to 'not man' is a species, and whether this is true or false is an interesting question to be discussed elsewhere. But if only the term 'man' is taken materially, and the word 'not' is taken significatively, then, provided the negation is negating,[145] the proposition is a false universal negative, being equivalent to 'No term like 'man' is a species'; but if the negation is only infinitizing,[146] then the proposition is an indefinite affirmative and is true, and then its sense is that something which is not a term like 'man' is a species, and this is true of the term 'donkey'.

Next, concerning 'That every man runs is possible' it is obvious that this is affirmative and indefinite, for it is equivalent to "A proposition like 'Every man runs' is possible."

But as regards 'That no man runs is possible' [*Nullum hominem currere est possibile*] it is obvious that if the whole phrase 'that no man runs' [*nullum hominem currere*] supposits materially, then the proposition is indefinite and affirmative and is equivalent to "A proposition like 'No man runs' is possible." But if you were to ask how it could become universal, I reply that this would come about by saying 'Every that no man runs is possible', so that 'every' would be taken significatively and would be a nominative providing the suppositum for the verb 'is', and the sense of this proposition would be 'Every proposition like 'no man runs' is possible'.[147] But if in the aforesaid proposi-

144. That is to say, *Non homo est species* is interpreted as "[A] 'non-man' is a species."

145. That is to say, *Non homo est species* is interpreted as "It is not the case that a 'man' is a species," i.e., 'No 'man' is a species', which claims that no token-word 'man' is a species, and hence it is false.

146. That is to say, *Non homo est species* is interpreted as "[A] non-'man' is a species," which claims that some term other than 'man' is a species, and this is true.

147. In the Latin Buridan uses both the masculine-feminine *(omnis, possibilis)* and neuter *(omne, possibile)* forms of the Latin words corresponding to 'every' and 'possible'. There being no such difference in English, I did not translate the corresponding disjunctive clauses. Nevertheless, perhaps it is worth mentioning that according to the generally accepted convention in medieval logic, materially suppositing words were taken to be indeclinable and of the neuter gender.

tion [namely, *Nullum hominem currere est possibile*] we were to take 'no' [*nullum*] significatively and 'that [a] man runs' [*hominem currere*] materially,[148] then the proposition would be a universal negative, and its sense would be "No proposition like 'A man runs' is possible".

But you might ask: "Could I not say the same concerning the proposition 'That every man runs is possible' [*Omnem hominem currere est possibile*], namely, that it would be a universal affirmative, taking 'every' [*omnem*] significatively and taking 'that a man runs' [*hominem currere*] materially?" I reply in the negative, because then the proposition would be ungrammatical, since the grammatical subject of the verb 'is' [*est*] has to be a nominative [phrase], but 'every' [*omnem*] here is not in the nominative case.[149]

Next, concerning *Non hominem currere est possibile*[150] we say that if the whole

148. That is, *Nullum hominem currere est possibile* is interpreted not as 'That no man runs is possible', as above, but as 'No that a man runs is possible'. Both of these readings are legitimate, the difference being that according to the first we construe *nullum* as part of the accusative-with-infinitive construction *nullum hominem currere,* and then it is of this whole construction that the proposition affirms that it is possible, whereas in the second we construe it as being the nominative determiner of the materially suppositing subject *hominem currere,* and thus it is of this construction that the proposition universally denies that it is possible.

149. In the English construction it is immediately obvious that in the sentence 'That every man runs is possible' the embedded 'every' cannot be the determiner of the materially suppositing 'That every man runs', for the subject of this sentence is the whole materially suppositing phrase 'That every man runs'. On the other hand, in the Latin sentence that Buridan is considering, *Omnem hominem currere est possibile,* the analogy with the previously considered *Nullum hominem currere est possibile* is more tempting, which gives rise to the question Buridan answers here. As he indicates in his answer, the difference between the two cases is that *nullum* is ambiguous; it can be taken to be either in the nominative case in the neuter gender or in the accusative case in the masculine gender. If it is taken to be in the nominative case and in the neuter gender, then it may be interpreted as the determiner, or *signum,* distributing the materially suppositing subject *hominem currere* (that a man runs). On the other hand, if *nullum* is taken to be in the accusative case in the masculine gender, then it has to be construed as part of the subject *nullum hominem currere* (that no man runs). There is no such ambiguity, however, in the case of *omnis* (every), which in the nominative neuter is *omne,* whereas the accusative masculine is *omnem.* Hence in *Omnem hominem currere est possibile* (A that-every-man-runs is possible), *omnem* can only be interpreted as being a part of the subject *omnem hominem currere* (that every man runs).

150. This Latin sentence could be variously translated, depending on whether we construe the negation with the embedded materially suppositing phrase or with the embedding sentence, and then as either negating or infinitizing. Buridan's subsequent analysis brings out precisely this ambiguity of the Latin sentence, which cannot be represented by a correspondingly ambiguous construction in English.

phrase *non hominem currere* is taken materially,[151] then the proposition is an indefinite affirmative; and if *hominem currere* is taken materially and the word *non* is taken significatively, then, if the negation is infinitizing,[152] it is still an indefinite affirmative, but if the negation is negating,[153] then it is a universal negative.

Then concerning 'It is impossible that a man is a donkey', and similarly concerning 'It is not possible that a man is a donkey', I say that 'impossible' and 'not possible' are always equivalent; and if the negation is infinitizing,[154] then the proposition is an indefinite affirmative, and if it is negating,[155] then it is a universal negative.

1.8.9.4 ON THE CONVERSIONS OF COMPOSITE MODALS

Now the aforesaid propositions are converted in the same way as assertoric propositions, provided that the terms 'possible', 'impossible', 'necessary', and 'contingent' are taken insofar as they are the [specific]

151. That is, *Non hominem currere est possibile* is interpreted as 'A that-a-non-man-runs is possible' (taking the negation to be infinitizing), or (taking the negation to be negating) 'A that not a man runs is possible'; given that *non* is construed as being part of the accusative with infinitive subject.

152. That is, *Non hominem currere est possibile* is interpreted as 'A non-that-a-man-runs is possible', which is to say that something that is not a proposition like 'A man runs' is possible, which is true, since for example, the proposition 'A man sits' is not a proposition like 'A man runs' (in the sense that it is not another token of the same type) and is possible.

153. That is, *Non hominem currere est possibile is* interpreted as 'No that-a-man-runs is possible', which is to say that nothing that is a proposition like 'A man runs' (i.e., no token of the proposition type 'A man runs') is possible, which is false, for, say, the first occurrence of the string of letters 'A man runs' enclosed in single quotation marks in this sentence is a token of the type in question, and is possible.

154. That is, *Impossibile est hominem esse asinum* is interpreted as 'A non-possible [proposition] is that a man is a donkey'—one of the non-possible propositions is that a man is a donkey, i.e., a proposition like 'A man is a donkey'. Obviously, this claim is true, since 'A man is a donkey' is a non-possible proposition.

155. That is, *Impossibile est hominem esse asinum* is interpreted as 'No possible [proposition] is that a man is a donkey'—none of the possible propositions is that a man is a donkey, i.e., a proposition like 'A man is a donkey'. Again, this claim is true, since none of the possible propositions is like 'A man is a donkey', given that any proposition like 'A man is a donkey' is not a possible proposition.

differences of propositions. But if they are taken as being the common differences of beings, then the term 'possible' or 'contingent' in predicate position ampliates the supposition of the subject to cover things that can exist; therefore, such a proposition is converted in the following way: 'Some A is possible; therefore, something possible is or can be A', or 'The Antichrist is possible; therefore, something possible is or can be the Antichrist'.

Concerning the fourth subdivision it is asked whether the terms 'possible' and 'contingent' insofar as they are appropriately the differences of propositions are ampliative in the same way as they are when they are taken as the common differences of beings. To this I reply in the negative. For if we say that a proposition is possible because it can exist, this amounts to taking 'possible' as a common difference or a property [*proprietas*] of being, and then it ampliates the supposition of the subject; and in this sense a proposition that does not yet exist is indeed possible. But if it is said to be possible because it signifies in the way things can be, then 'possible' does not ampliate, and a proposition is possible [in this way] only when it exists, for it does not signify except when it exists. And thus taking 'possible' in this sense, the proposition 'That every man runs is possible' is validly converted into 'A possible [proposition] is that every man runs'.

Second, the question is raised whether the term 'necessary' ampliates insofar as it is a common difference of being, just as the term 'possible' does. And I believe that this is so. For in contradictory propositions the predicates are the same, whence they are equally ampliative or nonampliative; therefore, just as in 'Socrates can be' and 'Socrates can not-be' there is ampliation, so there is ampliation in 'Socrates cannot be' and 'Socrates cannot not-be'; but just as 'possible' is expounded as 'can be', so is 'necessary' expounded as 'cannot not-be'; for the following two propositions are equipollent: 'B is necessary' and 'B cannot not be'; hence, the ampliation in them is similar. And from these we should infer that the proposition '[Something] creating is necessary' is true, even assuming the case that God would presently create nothing, for to say '[Something] creating is necessary' is equivalent to saying '[Something] creating cannot not-be', which is equivalent to 'What is or can be creating cannot not-be', and this is true.

We should note that it is customary to attribute conversion to the aforementioned propositions also in a different way, namely, in such a manner that it is not the whole proposition that is converted, but only the dictum, that is to say, the proposition that is subjected or predicated; for example, 'It is possible that a man is running; therefore, it is possible that someone running is a man'. There is no conversion here, however, for the mode always stays on the same

side. But as far as such an [improper] conversion is concerned, I state the rule that an affirmative proposition about possibility, or about truth, or about necessity, namely, one with one of these three modes, is converted in the same way as assertoric propositions, so that if the dictum is a universal negative or a particular affirmative, then that dictum is converted simply; but if the dictum is a universal affirmative, then it is converted accidentally, whereas if it is a particular negative, then it is not converted. Now all these conversions hold by virtue of the following rules: 'if the antecedent is true, then the consequent is true', 'if the antecedent is possible, then the consequent is possible', 'if the antecedent is necessary, then the consequent is necessary'; therefore, if I say 'It is true that Socrates runs', then, since 'Socrates runs' implies 'Someone running is Socrates', it follows that 'therefore, it is true that someone running is Socrates', by the foregoing rule. And the same sort of proof would apply to the others. But the aforementioned [type of] conversion is not valid for propositions with 'false', or 'impossible', or 'known', since the above-stated rule is not valid in their case; for it does not follow that if the antecedent is impossible, then the consequent is impossible; nor does it follow that if the antecedent is false, then the consequent is false, and so, if I say that it is false that every animal is a man, it does not follow that therefore it is false that some man is an animal, for the antecedent is true and the consequent is false.

1.8.10 On modals about contingency

(1) What remains is to discuss modals about contingency both ways [*de contingenti ad utrumlibet*]. And [a proposition] is called 'about contingency both ways' because it both can be and can not-be [true], as in the case of 'Socrates happens to [*contingit*] run', for Socrates can run and can not-run, and similarly, 'Socrates happens not to run', for Socrates can not-run and can run. (2) Concerning 'contingent' in this sense four rules are provided. The first is that a proposition about contingency implies both an affirmative and a negative one about possibility. (3) The second rule is that every proposition about contingency is incompatible with a proposition about necessity and with a proposition about impossibility having the same terms, i.e., every universal with every particular, and every particular with every universal. (4) The third rule is that every proposition about contingency is converted into one of the opposite quality, while retaining the same quantity and the same order of terms. (5) The fourth rule is that no proposition about contingency is converted-in-terms into

another one about contingency, but rather every proposition about contingency is converted into another one about possibility.

The tenth and final part of this chapter contains five sections; the first provides the meaning [*quid nominis*][156] of 'contingent', and the other four are four rules.

Concerning the first section we should note that, as has already been said, the name 'contingent' sometimes can be the predicate or the subject of the proposition, as in 'B is contingent' or 'It is contingent that B', and then it does not render the proposition properly modal, although such a proposition is usually called a 'composite modal' if the other term supposits for another proposition, as in 'That Socrates runs is contingent'; but sometimes ['contingent'] belongs to the copula, as in saying 'A man contingently runs' [*Hominem contingens est currere*], or 'A man happens to run' [*Hominem contingit currere*], in which case the proposition is properly modal.

Again, if 'contingent' is the subject or the predicate of a proposition, then in one way it can be taken as one of the common differences of being, and in this way every being besides God is contingent, for it both can be and can not-be, and God alone is necessary, because He cannot not-be. In another way 'contingent' is taken to be as one of the differences of propositions, and then saying that such and such a proposition is contingent is equivalent to saying that such a proposition is possible and not necessary.

We should note that every proposition that is properly about contingency, whether affirmative or negative, with an affirmative mode, implies a conjunctive composed of one affirmative about possibility and another negative about possibility, retaining the same terms and the same quantity. For example, 'B happens to be A; therefore, B is able to be A and B is able not to be A' is valid, and 'B happens not to be A; therefore, B is able not to be A and B is able to be A' is also valid. But [an inference] in the other direction, from such a conjunctive to the corresponding proposition about contingency, involves the fallacy of the consequent,[157] for 'Some just being can be God and some just being can not-be God; therefore some just being happens to be God' is invalid, because the antecedent is true and the consequent is false, since nothing merely happens to be God.[158]

But every proposition about necessity or possibility implies a proposition about contingency with the same terms and a negated mode, as is the case with 'Every B has to be A; therefore, no B [just] happens to be A'; and with

156. For the justification of this translation see 4.2.4 n. 19.

157. See 7.4.5.

158. This is so since whatever is God is necessarily God, given that God is the only necessary being.

'Every B is unable to be A; therefore no B [just] happens to be A'. But moving in the other direction, from such a proposition about contingency to a disjunction of the corresponding propositions about necessity and impossibility, or to either member [of this disjunction, the inference] is [a case of] the fallacy of the consequent, for 'No just being happens to be God; therefore, either every just being has to be God or every just being is unable to be God'[159] is not valid; and, similarly, 'No star happens to be a planet; therefore, either every star has to be a planet, or every star is unable to be a planet' is not valid either, for the antecedents are true and the consequents are false.

From the foregoing it clearly follows that a proposition about contingency with an affirmative mode is not equivalent to a conjunctive proposition composed of an affirmative about possibility and a negative about possibility retaining the same terms and the same quantity, nor is it expounded by such a conjunctive. Similarly, neither is a proposition about contingency with a negated mode equivalent to a disjunctive proposition consisting of a proposition about necessity and a proposition about impossibility. But every proposition about contingency with an affirmative mode is equivalent to a categorical modal composed of the same terms, the copula of which is conjunctive, [consisting] of the copula of an affirmative about possibility and of a negative about possibility, as for example 'B happens to be A' is expounded by 'B can be and can not-be A'.[160] But a proposition about contingency with a negated mode is expounded by another categorical composed of the same terms and a disjunctive [copula consisting] of the copulas of [the corresponding] propositions about necessity and impossibility, as for example 'Every B does not [just] happen to be A' is expounded by 'Every B either has to be or is unable to be A'.

We should also note that, as I said in connection with the other [modals] earlier, that I here call a proposition 'about contingency' only if the mode 'contingent' belongs to the copula and no negation precedes it, for if a negation preceded it, then the proposition no longer would deserve to be called 'about contingency', but rather a proposition 'about necessity or impossibility disjunctively', for it is equipollent to such a proposition. For example, 'No B happens to be A' is equivalent to 'Every B has to be or cannot be A'.

159. *Nullum justum contingit esse deum; ergo omne justum necesse est esse deum vel omne justum impossibile est esse deum.* The antecedent is true, because nothing that is or can be just is merely contingently God, for anything that is or can be just is either God, who is necessarily God, or is not God, and then it cannot be God. But the consequent is false, for a just man does not have to be God, which falsifies the first disjunct, and a just being that is God is able to be God, which falsifies the second disjunct. Similar considerations apply to the next example.

160. See 1.3.4 n. 63.

And so the rules given here should be understood as concerning only propositions in which a negation does not precede the mode. And then the first rule obviously follows. Furthermore, the first rule immediately entails the second, for a particular about contingency, whether affirmative or negative, implies both an affirmative and a negative particular about possibility. But an affirmative particular about possibility is incompatible with a universal about impossibility, and a negative particular [about possibility] with a universal about necessity. And similarly, a universal about contingency implies both an affirmative and a negative universal about possibility, for it contradicts the particulars about possibility and impossibility [taken in conjunction].[161]

The third rule is clear from the foregoing. For it has been said that a negative about contingency and an affirmative about contingency are equipollent, whence they are mutually converted; and so they follow from each other, e.g., 'Every man happens to run; therefore every man happens not to run',[162] and conversely. But we should beware lest the negation precede the mode, for the inference 'Every man happens to run; therefore, no man happens to run' is not valid, indeed, these propositions are contraries.

The fourth rule contains two clauses. The first holds, because otherwise falsity would follow from truth. And I call [a conversion] 'conversion-in-terms' when the terms [of a proposition] are transposed, i.e., when the subject becomes the predicate and conversely. For example, 'God happens to be [someone] creating' does not imply '[Someone] creating happens to be God'. The first is true and the second is false, for otherwise it would follow that someone creating is not necessarily God, the opposite of which was stated earlier.[163]

The second clause is clear, because any proposition about contingency implies an affirmative about possibility, which is validly converted into another affirmative about possibility.

161. For example, the universal about contingency 'Every man happens to run' or 'Every man contingently runs' contradicts 'Some man cannot run and some man has to run', which consists of particulars about possibility and impossibility.

162. This is true in the intended sense, namely, for every man it is contingent that he runs, therefore for every man it is also contingent (i.e., neither necessary nor impossible) that he does not run, and vice versa.

163. That is, God may and may not be creating, for creation depends on His free will, but anything creating may not be other than God, whence it is not contingent that the one creating is God.

Treatise 2
On predicables

2.1 Chapter 1: On the predicables

2.1.1 Several senses of the term 'predicable'

> [The term] 'predicable' is sometimes taken strictly, sometimes broadly. A predicable, strictly speaking, is what is predicated of many [things]; a predicable, taken broadly, is what is predicated whether of only one or of many things; of only one thing, as 'Socrates' is predicated only of him [i.e., Socrates], when we say: 'Socrates is Socrates', of many things, as when 'animal' is predicated of man and horse, and 'man' of Socrates and Plato, and so forth.

The second treatise deals with predicables. It contains seven chapters: the first is about a distinction concerning the name 'predicable', the second is about genus, the third is about species, the fourth is about difference, the fifth is about property, the sixth is about accident, and the seventh is about the proper and common characteristics of predicables. The first chapter contains three parts: the first is the distinction concerning the name 'predicable', the second is about the accord between the names 'predicable' and 'universal', and the third is the division of predicables. Concerning the first part, and the whole treatise, we should note that the terms 'predicate' and 'predicable' do not differ in their significations, except with respect to actuality and potentiality. And although we may say that Porphyry discussed predicables and Aristotle, in the *Topics,* discussed predicates, we should not think that Aristotle and Porphyry wanted to draw a distinction in their discussions between these with respect to actuality and potentiality; indeed, both of them call that which is predicated . . . etc., that is, what can be predicated . . . etc., a genus. Second, we should note that although every conventionally significative utterance when taken materially can be the subject or the predicate in a proposition, not all such utterances when taken significatively can thus be the subject or the predicate. But here we intend to consider only terms that can be predicated when taken significatively. Third, we should note that the things that exist without any operation of the soul, such as stones or plants, are neither predicates nor subjects in propositions, but the concepts in the mind, insofar as they occur in mental propositions, can be [subjects or predicates], as can vocal or written terms, which are rendered significative by the mediation of these concepts, as has been said elsewhere.[1] And these are called predicables insofar as they are apt to be predicated of certain subjects in certain propositions; and they could likewise be called subjectible, insofar as they can also be subjected to certain predicates in certain propositions.

1. See 1.1.5 ff.

Therefore, we should note with reference to the author's distinction that some terms are predicated, or are apt to be predicated, of many things, and some only of one thing, as he himself illustrates; and broadly speaking both [kinds] are called 'predicable'. But strictly speaking, the name 'predicable' is restricted to supposit only for terms predicable of many things, and it is in this strict sense that Porphyry intends to discuss the predicables. But then a serious doubt arises as to whether any term is predicable only of one thing. And it appears not. For such would be the term 'Socrates' or some other term that we call 'singular', or 'discrete'; but this is not the case, for the term 'Socrates' is predicable of many things. Proof: for a thing is not predicated of a thing, speaking about things that exist without the operation of the soul, such as stones or trees; but it is [only] a significative term that is predicated of another significative term, as was said above. Now it is obvious, however, that the term 'Socrates' is predicated of a great number of terms, as for example, of 'Socrates', 'man', 'animal', 'risible[2] [animal]', 'white [thing]', 'educated [person]', etc.; for a man is Socrates, an animal is Socrates, a risible [animal] is Socrates, a white [thing] is Socrates, and so forth for many others.

Now, without any doubt I believe that the objection is valid in its own way, and that every term truly predicable or subjectible in a true affirmative proposition is truly predicable not only of one, but of many, i.e., of each and every one of many different terms. Therefore, [the distinction] should be expounded in such a manner that a singular term, such as 'Socrates', is not apt to be predicated of many things, meaning that it cannot supposit for many things dividedly, i.e., for each and every one, in the sense that if we mark one thing for which it supposits, it cannot supposit for another. Indeed, even if we mark several things for which it supposits conjunctively [*supponit coniunctim*], as does the term 'this people', it cannot supposit for any others, unless this happens by equivocation, or it happens because it denominates the whole on account of a principal part, or on account of the unity resulting from the continuity of several parts succeeding each other in something, as in a river, or in some such manner (which is not to be discussed here, but elsewhere, namely, where the question will be raised about the identity of parts [taken together] with their whole); as, e.g., how the term 'Seine' is a singular term, although it is not the same water that is now the Seine and that was the Seine last year.[3]

2. Obviously, 'risible' here and throughout should not be taken in the modern vernacular sense of 'ridiculous', but in the somewhat outmoded, but still quite commonly recognized sense of 'capable of laughter'. In any case, in this sense, the term *risibilis* (risible) was taken to be the stock example of a *proprium* (property) of man, in the technical sense of 'property' to be explained by Buridan in more detail below. See 1.1.6 n. 26.

3. See J. Buridan, *Quaestiones super octo Physicorum libros Aristotelis: Kommentar zur Aristotelischen Physik* (Paris, 1509; reprint, Frankfurt am Main: Minerva, 1964), bk. 1, q. 10.

Therefore, a 'predicable', strictly speaking, in the sense intended here, is described as a term apt to be predicated of many things, i.e., apt to supposit for many things, and not for only one thing in the way we just described concerning singular terms.

2.1.2 The difference and agreement between 'predicable' and 'universal'

> Therefore, a predicable, strictly speaking, is the same [thing] as a universal, but they differ because a predicable is defined as something that is apt to be predicated of many things, and a universal as something that is apt to be in many things.

The second part is in accordance with [the formulation of] our author,[4] but is not true, properly speaking [*de proprietate sermonis*]; for if A is the same [thing] as B, then the one does not differ from the other. Therefore, I abandon his text, and I say that the terms 'predicable' and 'universal' are not the same, but they are convertibly said to be [the] same [thing] [*dicuntur idem convertibiliter*], so that every predicable is a universal and conversely, and thus the predicate '[the] same [thing]' is truly affirmed of them taken significatively. For every predicable and universal are [the] same [thing], and, conversely, every universal and predicable are [the] same [thing].[5] But the terms 'predicable' and 'universal' are said to be diverse in their concepts, for they were imposed according to different concepts to signify the same things. For the terms 'predicate' and 'subject' are predicated correlatively, and thus also are the terms 'predicable' and 'subjectible'; for a term is said to be predicable, because it can be predicated of a subject, and subjectible, because it can be subjected to a predicate in a proposition. But the same term is called a universal because it indifferently signifies many things, and is apt to supposit for many things, as has been said, whether as a subject or as a predicate. Nor should we think that a universal term is *in* the terms contained under it, except taking 'being in' [*inesse*] for being truly predicated affirmatively, so that 'being predicated' and 'being in' would not differ, except verbally [*secundum vocem*].[6] And

4. See Peter of Spain, *Tractatus,* ed. L. M. de Rijk (Assen: van Gorcum, 1972), p. 17.

5. This is in fact the explication of the phrase *dicuntur idem convertibiliter* (are convertibly said to be the same thing). See 2.2.2 nn. 13, 17.

6. See 1.3.4 n. 62.

we should note that although sometimes something is said to be a universal with respect to causation, because it is a cause of many things, as is God, or a universal on account of distribution, as when a proposition is said to be universal, or in some other ways, nevertheless, 'universal' is here taken only for a common term because it signifies many things, or rather, to put it better, because it supposits for many, as was said earlier.

2.1.3 The division of predicables

Predicables, taken strictly, are divided into genus, species, difference, property and accident.

The third part divides the term 'predicable' into its species. For, since something is called a predicable because it is apt to be predicated of many things, it is reasonable to distinguish the species or modes contained under the term 'predicable' according to the different modes of predication. Therefore, everything that is predicated of something is either predicated essentially, so that neither term adds some extraneous connotation to the signification of the other, or it is predicated denominatively, so that one term does add some extrinsic connotation to the signification of the other. This division is clearly exhaustive, for it is given in terms of opposites. If, therefore, something is predicated essentially, in the above-described manner, then it is either predicated in [reply to the question] 'What [is it?]' [*in quid*] or in [reply to the question] 'What [is it like?]' [*in quale*]; and if *in quale,* then it is a difference, and if *in quid,* then, if it is predicated of many things differing in species, then it is called 'genus', but if it is predicated of many things differing only numerically, then it is called 'species', or even if it is predicated of many things differing in species and has a superior genus, it is still called a 'species', as will be explained later. If, however, it is predicated denominatively, then it is either predicated convertibly with that of which it is predicated, or it is not; if so, then with respect to that it is called 'property'; if not, then with respect to that it is called 'accident'. Thus it is obvious that every predicable, with respect to that of which it is predicable, has to be called either a genus, or a species, or a difference, or a property, or an accident.

[Some] doubts concerning this division will be considered, when its individual members will have been discussed in particular. But some people want to draw the distinctions in another way, saying that every predicable is predicable either *in quid* or *in quale;* if *in quid,* then it is either a genus or a species,

and if *in quale,* then either essentially or accidentally; and then, if accidentally, then either convertibly or not. But this whole [division] is wrongly stated, for there are many predicables that are neither predicated in reply to the question 'What is it?' [*in quid*] nor in reply to the question 'What is it like?' [*in quale*], but in reply to the question 'How much?' [*in quantum*], [i.e., 'How big?', 'How long?', etc.] as 'two-cubits-long' or 'three-cubits-long', or in reply to the question 'How many?' [*in quot*], as 'three', 'four', or in reply to the question 'When?' [*in quando*], as 'yesterday', 'tomorrow', or in reply to the question 'Where?' [*in ubi*], as 'in the house', 'outside the house', etc.[7]

2.2 Chapter 2: On genus

2.2.1 The definition of genus

> A genus is that which is predicated of many things different in species in [reply to the question] 'What is it?' [*in eo quod quid*], as when 'animal' is predicated in [reply to the question] 'What is it?' [*in quid*] of 'man' and 'horse', which differ in species.[8]

The second chapter is about genus. It contains seven parts: the first is a definition of 'genus'; the second is the clarification of the part of the definition of genus: 'different in species'; the third is the clarification of the expression: 'in [reply to the question] 'What is it?' [*in eo quod quid*]'; the fourth is another definition of 'genus'; the fifth is a classification of genera into 'most general' [*generalissimum*] and 'subaltern' [*subalternum*]; the sixth is about the most general genus; and the seventh is about the subaltern genus.

7. Clearly, the disparity between the system of interrogatives in English and in Latin renders the "matching" translation of these phrases impossible. Nevertheless, the system of the Latin is clear enough: predicables in the category of quantity, e.g., are those responding to *quantum,* i.e., to a question asking about some quantity of a thing, be it length, width, weight, etc. For the sake of simplicity, henceforth I will use the bracketed Latin phrases as introduced here to refer to the different modes of predication in the appropriate categories, unless, as in the next section, there are some variations in the terminology.

8. This sentence could also be translated as follows: "of a man and a horse, which differ in species"; however, since at the end of this part Buridan explicitly states that here these terms should be taken to be in material supposition, I follow his interpretation in the translation. See nn. 13 and 17 below.

Our author, at the beginning of this chapter, put forth some other senses of [the term] 'genus', which I omitted, as they hardly bear any relevance to our topic.[9] Anyone who wishes, however, may check them in Porphyry. But then, for the exposition of this definition, we should note that not every genus is actually predicated, indeed, sometimes it is subjected, e.g., when I say 'An animal is white', the term 'animal', which is a genus, is subjected in this proposition. Therefore, the phrase 'that which is predicated' is to be expounded as 'that which is apt to be predicated'; and since the expression 'that which is apt to be predicated' means the same as the name 'predicable', we should say: 'a genus is [something] predicable of many [things] . . . "etc. And 'predicable' is posited here as a genus, and it is by this that a genus differs from syncategorematic utterances, which are not apt to be predicated or subjected. [The clause] 'of many [things]' is put here to distinguish [a genus] from singular terms, i.e., individuals.[10] [The clause] 'different in species' is put here to distinguish it from a most specific species [*species specialissima*], which is not a genus. And [the clause] 'in [reply to the question] 'What is it?" [*in eo quod quid*], is put here to distinguish it from the other predicables, namely, from difference, property, and accident, which are not predicated *in quid,* but *in quale* or *in quantum,* or in any other manner, as Porphyry says.[11] We should also note that although the term 'dog' is predicated of the barking [animal], of the marine fish and of the heavenly constellation,[12] it is nevertheless not their genus; neither is the term 'being' a genus of the ten categories, for it is not predicated of them univocally, but equivocally. But here we intend to deal only with univocal predications, not insofar as 'univocal' is distinguished from 'denominative', but insofar as it is distinguished from 'equivocal' and 'analogical'. Therefore in the definition of genus we should imply, or add, the qualification 'univocally', so that a genus is [something] univocally predicable of many things different in species in reply to the question 'What is it?' [*in eo quod quid*]. We should also note that

9. See Peter of Spain, *Tractatus,* p. 17.

10. *Ad differentiam terminorum singularium, scilicet individuorum.* Another possible translation would be: 'to distinguish it from singular, i.e., individual terms'. It is characteristic of Buridan, however, to assimilate in this context terms that would be normally used to refer to things to terms that are normally used to refer to terms referring to things. Hence, I suspect that even here, as well as later (in 2.3.5 explicitly), he intends to use the term 'individual', normally used to refer to individual things, to refer to singular terms. See his interpretation of 'primary substance' in the *Treatise on Categories* (3.2.1.), according to which this phrase in that context should be used to refer to singular terms referring to individual substances.

11. For the technical use of these Latin phrases see n. 7 above.

12. The Latin word *canis,* as being applicable to all these diverse objects, served as the standard example of equivocation. English speakers may prefer, say, 'bat' as applicable to the flying mammal and to the baseball bat.

the example given after the definition, namely, that 'animal' is predicated of 'man' and 'horse', should be understood in material supposition, i.e., so that the term 'animal' is predicated of the terms 'man' and 'horse'. Therefore [an] animal is not a genus, but the term 'animal' is.

2.2.2 *On the phrase 'different in species'*

(1) To understand the phrase 'different in species', we have to know that 'different' is predicated in as many ways as is 'same'. (2) But 'same' is predicated in three ways, namely, [in the sense of] 'same in genus', 'same in species', and 'numerically the same'. (3) 'Same in genus' are said to be those that are contained under the same genus, as 'man' and 'horse' under 'animal'.[13] (4) 'Same in species' are said to be those that are under the same species, as 'Socrates' and 'Plato' under 'man'. (5) 'Numerically the same' is predicated in three ways: 'the same in name or definition', 'the same in property', and 'the same in accident'. (6) 'The same in name' [*eadem nomine*] are said to be those whose thing is one, but the names of which are many [*quorum res est una, nomina vero plura*], as 'Marcus' and 'Tullius'.[14] (7) 'The same in definition' are said to be those of which the one is the definition of the other, as 'man' and 'rational mortal animal'. (8) 'The same in property' are said to be those of which the one is the property of the other, as 'man' and 'risible'. (9) 'The same in accident' are

13. As will be clear from Buridan's later comments, he distinguishes the various senses of 'same' *(idem)* and 'different' *(differens)* as they apply to terms, and not as they apply to the things supposited for by these terms. He distinguishes these senses, however, as applying to terms in their significative uses, i.e., in virtue of what they supposit for in personal and not in material supposition. This way of speaking was quite common in the technical Latin of medieval philosophers, but it sounds quite odd in English. An alternative rendering of this Latin sentence might be: "'Same in genus' are said to be those things that are contained under the same genus, as a man and a horse under 'animal'." But Buridan's interpretation of this sentence excludes this translation. According to this interpretation it is not a flesh and blood man and a flesh and blood horse that are said to be the same in genus, but the terms 'horse' and 'man', not because these two terms fall under the same generic term, but because the same generic term, 'animal', can be truly predicated of these two terms taken significatively, i.e., in virtue of the fact that their personal supposita are also personal supposita of this generic term. Similar considerations apply to the rest of this paragraph as well.

14. The two names refer to the same person: Marcus Tullius Cicero. This is what is expressed by the formulation that Marcus and Tullius are one thing whose names are many.

said to be those of which one is the accident of the other, as 'Socrates' and 'white'. (10) Similarly, 'different' is predicated in three ways: 'different in genus', 'different in species', and 'numerically different'. (11) 'Different in genus' are said to be those that are contained under different genera, as 'man' under the genus 'animal', and 'tree' under the genus 'plant'. (12) 'Different in species' are said to be those which are of different species, as are 'man' and 'donkey'. (13) 'Numerically different' are said to be those that constitute a different number, as do 'Socrates' and 'Plato'.

In the second part there are several short sections. The first says that 'different' is predicated in as many ways as 'same'. And this is true insofar as the terms 'same' and 'different', or 'diverse', are not absolutely opposed, but relatively, for they are correctly verified of the same thing at the same time, but not with respect to the same thing, for Socrates is the same as himself, but is diverse from Plato. But in as many ways one of the opposites is predicated, so also in as many ways is predicated the other, as is said in bk. 1 of the *Topics.*[15]

The second section distinguishes [the phrases] 'the same', 'the same in genus', 'the same in species', and 'numerically the same'. But Aristotle in bk. 5 of the *Metaphysics*[16] adds a fourth mode [*modus*], namely, 'proportionally' or 'analogically the same'; however, the author omitted that mode, for that concerns non-univocals, which are not dealt with in this treatise, as I said before.

The third section describes 'the same in genus', [stating] that those are [the same in genus] which are under the same genus. Concerning this we should note that a genus is said to be superior to [its] species with respect to predication or supposition, because it is predicated of more, i.e., it supposits for more things. We should note, therefore, that the terms that are species are said to be the same in genus not in the sense that they are the same with respect to each other, nor in the sense that they supposit for the same thing or things, but only in the sense that the same genus is predicable of them *in quid,* and they are contained under it, as the terms 'man' and 'donkey' are contained under the term 'animal'.

And the fourth section is expounded analogously, namely, that Socrates and Plato, i.e., the terms 'Socrates' and 'Plato', are said to be the same in species because they are contained under the same species, namely, under man, i.e., under the term 'man'.

But in the fifth section the author subdivided 'numerically the same'. And this can be described so that those [terms] are said to be numerically the same that supposit for the same thing, and these are diverse terms, which are said to be numerically the same in the sense that, when taken significatively, the

15. Aristotle, *Topics* I.15.107a34.

16. Aristotle, *Metaphysics* V.6.1016b31–35.

predicate '[the] same' is truly affirmed of them.[17] For example, the terms 'man' and 'white [thing]' are said to be the same, for we truly say that [a] man and [a] white [thing] are the same, for the same thing, namely, Socrates, is a man, and is white. Therefore, 'are numerically the same' implies 'are the same', but 'are the same in species, or genus' does not imply 'are the same', but it implies only that they [the subjects] have the same species or genus. Thus, then, our author divides 'numerically the same' into 'the same in name or definition', 'the same in property' and 'the same in accident'.

Further, in the sixth section, he describes 'the same in name', stating that the same in name are said to be those whose names are many, but the thing is one, that is to say, the thing for which they supposit is the same. This is how we say that Marcus and Tullius are the same in name, for the same man is called Marcus and Tullius. It is true, however, that according to this exposition all terms that are said to be numerically the same, would be said to be the same in name. But perhaps the author intended that what is required for the specification of this mode is not only that the things that they supposit for should be the same, but also that the concept corresponding to both names in the mind should be the same. And in this way only synonymous names could be said to be the same in name, and none other.

Next, in the seventh section, he says that those are called 'the same in definition' of which the one is the definition of the other, as the expression 'rational mortal animal' is the definition of the term 'man'. Therefore, the name 'same' is truly predicated of them taken significatively; for 'a rational mortal animal and a man are the same' is true. And we can also note that the author places 'the same in name' and 'the same in definition' in the same member [of the division], for if two synonymous names are definable, then the definition of the one has to be the same as that of the other.

In the eighth section the author says that those, i.e., those terms, are said to be the same in property, of which the one is the property of the other, so that they are related as are a property and the subject of which it is the property, as are the terms 'man' and 'risible', which we shall discuss in detail later.

Similarly, in the ninth section it is said that those are said to be the same in accident of which the one is an accident of the other, i.e., those terms that are related to each other as are an accident and the subject of which that acci-

17. Obviously, when taken materially, i.e., as standing for themselves, the terms 'man' and 'animal' cannot be said to be numerically the same, since they are not the same term. The following proposition, however, is true: 'A man and an animal are numerically the same'; and in this proposition the predicate 'numerically the same' is predicated of these two terms taken significatively, i.e., they are said to be *(dicuntur)* numerically the same on account of the fact that some of their supposita are *(sunt)* numerically the same.

dent is accidentally predicated, as are the terms 'white' and 'man', which are said to be the same, because it is true to say that [a] white [thing] and a man are the same, as in the case of Socrates, who is white and is a man. It is true that in some books we find the example of an accident and a subject being the same, as are Socrates and the whiteness which is in Socrates. But this is not a good example, for [his] whiteness and Socrates are two mutually diverse things, and the one is not the other. Therefore, we should note well that there are some things which are the same [thing], as are parts which are [the same] whole, but which are not mutually the same [thing].[18] This is not our present concern, however; rather, our concern is that some terms that *are not* mutually the same *are said to be* the same as each other, for we truly say of them taken significatively that this is the same as that, as, for example, that Marcus is the same as Tullius, and that a rational mortal animal is the same as a man, and that a man is the same as a risible [thing], and that Socrates is the same as a white [thing], but not that Socrates is the same as a whiteness.

In the tenth section 'different' or 'diverse' is divided into 'diverse in genus', 'diverse in species', and 'diverse numerically'. Concerning this point we should note that terms, although they *are* diverse from each other, *are said to be the same,* as has been said; and thus in the singular number the one is said to be the same as the other; as when we say that Socrates and a white [thing] are the same, we can just as well say that Socrates is the same as a white [thing], and a white [thing] is the same as Socrates. And in an analogous manner, diverse terms, such as the terms 'Socrates' and 'Plato', not only *are* diverse from each other, but, even taken significatively, they are also *said to be* diverse; for we say that Socrates and Plato are diverse or different from each other, and thus also either one of them is said to be diverse or different from the other. Whence it is obvious that just as 'are the same' and 'are different' are said in many ways, so also are 'is the same' and 'is different', in the singular number.

The eleventh section says that *diverse in genus* are whatever are contained under diverse genera—to which we should add: 'if neither is contained under the other'. And the genera themselves are said to be diverse in genus, as are the terms 'substance', 'quality', etc. And the twelfth section, concerning those that are different in species, is expounded in a similar manner.

The last section says that *numerically different* are whatever make up a different number, i.e., those terms are said to be numerically different which sup-

18. Buridan's point is that the same parts of a whole, taken together, are said to be the same whole, even if the parts are not the same as each other; e.g., the same walls and the same roof (say, the same as we had yesterday) taken together are the same house (i.e., the same as we had yesterday), whereas the walls are not the same as the roof.

posit for diverse things, so that the thing for which the one term supposits is counted as distinct from the thing for which the other term supposits. Whence we should note that the same terms are correctly said to be the same, for they supposit for some thing that is the same, and also to be diverse, for they supposit for diverse things [as well]; for we say that a man and an animal are the same, given that they are Socrates, whereas a man and an animal are diverse, given that the man is Socrates, and the animal is Plato.

2.2.3 *On the phrase 'predicated* in quid*'*

> That is said to be predicated in quid which appropriately replies to a question formed by means of [the interrogative] 'What?'; thus when it is asked: 'What is [a] man?', it is an appropriate reply [to say]: 'An animal'; therefore 'animal' is predicated in quid of man.

The third part is clear. And one can likewise say that that is predicated *in quale* which appropriately answers a question formed by means of [the interrogative] 'What is it like?' [*quale?*]; likewise, something is predicated *in quantum* [replying to the question: 'How much?', *quantum?*], and *in quot* [replying to the question: 'How many?', *quot?*], and *in quando* [replying to the question: 'When?', *quando?*], and *in ubi* [replying to the question: 'Where?', *ubi?*], for if we ask: 'How many are these donkeys?', we reply that they are three or four, and so on for the rest.[19]

2.2.4 *Another definition of genus*

> In another way 'genus' is defined thus: 'a genus is that to which a species is subordinated [*supponitur*]'.

This second description of 'genus' should be supplemented [by adding] that a genus is something predicable univocally *in quid* to which a species is subordinated. And from the exposition of the first definition, the exposition of this is also clear.

19. See n. 7 above.

2.2.5 The division of genus

'Genus' is divided into 'most general' [*genus generalissimum*] and 'subaltern' [*genus subalternum*].

This definition will be clarified by the subsequent sections. A genus is called 'subaltern' if it is contained under another genus superior to it, and it is called 'most general' if it is not contained under another, but is a supreme genus.

2.2.6 On the most general genus

(1) A most general genus is what does not have a superior genus above it; (2) or, a most general genus is a genus that cannot be a species. (3) And such are the ten categories, namely, substance, quantity, quality, relation, action, passion, time, place, position, and habit, and these ten are said to be most general, because they have no genus above them. (4) For although 'being' is predicated of them, it is predicated equivocally, and not univocally, and so it is not a genus. (5) Of these ten we shall say nothing here, but we shall discuss them in the Categories.[20]

The sixth part has five sections. The first two are descriptions of the 'most general genus'. And to the first description, which says that 'a most general genus is what does not have a superior genus above it' it is objected that this definition applies to some things that are not genera, such as the heavens and God. For nothing is a superior genus above the heavens, for all genera are significative terms, which are here, with us, and not above the heavens, nor above God, and the heavens and God are not genera.

We have to say that to eliminate such counterinstances the description has to be supplemented, and it should be formulated as follows: 'a most general genus is a genus that does not have above it another, superior, genus'. And 'above' is not taken here in a local [i.e., spatial] sense, but with respect to predication and supposition, as I said earlier, so that a term is said to be above another term if it is universally predicated of the latter, and also of others, but not conversely, or, if it supposits for everything that the other term does and also for others.

And from this first description there follows the second, namely, that a most

20. See Treatise 3.

general genus is a genus such that it is not a species. For every species has a genus above it; therefore none can be a most general genus.

The third section is the division of 'most general genus' into the ten categories, but it must not be understood in such a fashion that [a] substance or [a] quantity would be a most general genus, but rather that the terms, 'substance', 'quantity', etc. are the most general genera, so that the term 'most general genus' is divided into the terms 'substance', 'quantity', etc., that is to say, it is truly predicated of each of these terms taken materially.

The fourth section eliminates a doubt. For someone may believe that the name 'being' could be a superior genus to the ten categories, since it is predicated of them. Therefore the author replies, as does Porphyry, that 'being' is not their 'genus', for it is not predicated of them univocally, but equivocally, and a genus has to be predicated univocally of its species. But whether this is true, namely, that 'being' is not predicated according to one concept of substances and accidents, is to be dealt with in first philosophy.[21]

The last section refers us to the Categories, and is clear in itself.

2.2.7 On the subaltern genus

> A subaltern genus is a genus that can also be a species, as for example 'animal' is the genus of 'man' and 'horse', and is a species of 'animate body'.

The examples of this part have to be interpreted materially, namely, so that the term 'animal' is the genus of the terms 'man' and 'horse', as it is predicated of them *in quid* while they differ in species, and it is also a species of the term 'animate body', and of the term 'substance'. Again, 'subaltern genus' could also be described as that which is a genus above which there is another genus.

21. See Buridan, *Quaestiones in Aristotelis Metaphysicam: Kommentar zur Aristotelischen Metaphysik* (Paris, 1518; reprint, Frankfurt am Main: Minerva, 1964), bk. 4, q. 6.

2.3 Chapter 3: On species

2.3.1 The definition of species

(1) A species is that which is predicated of many numerically different things in response to the question 'What is it?' [*in eo quod quid*], as 'man' is predicated of Plato and Socrates, who are numerically different. (2) In another way it is defined as follows: a species is that which is placed under a genus, (3) or thus: a species is that of which a genus is predicated in response to the question 'What is it?' [*in eo quod quid*].

The third chapter is about species. It contains five parts. The first provides definitions of 'species'; the second divides 'species' and explains the members of the division, the third infers a corollary, the fourth, in explanation of what has been and what will be said, constructs a diagram, which we usually call 'the tree of Porphyry', and the fifth describes 'individual'.

The first part contains three sections, namely, three definitions of 'species'. Concerning these we should note, in accord with Porphyry, that the first is only a definition of a most specific species [*species specialissima*], and does not apply to a subaltern species. But the other two are definitions of 'species' taken insofar as it covers both a most special and a subaltern species. And next the first definition has to be expounded and supplemented as follows: a most special species is something univocally predicable *in quid* and immediately of many things differing only numerically.

And 'predicable' is put here as the genus, as it was in the definition of 'genus'. And 'univocally' is put here to exclude singular equivocal terms, as the term 'John'; for we say that this is John and that is John, and so on for many others, but then that name is not predicated of those many according to one imposition and one concept, but rather of each one of them according to a proper imposition and according to a proper and individual concept, in terms of which the name was imposed on this or that, which is thus designated and pointed out; therefore it is not univocally, but equivocally predicated in this way of many things, for which reason it is not a species but an individual.

Next, 'of many things differing only numerically' is added, because those things of which a genus is predicated are also correctly said to be numerically different, but not only numerically, but also specifically; therefore a genus is not said to be a most specific species on account of being thus predicated of many, numerically different things. Next, 'immediately' is added above for the sake of the distinction from a genus, which is correctly predicated of individuals, which differ only numerically, but not immediately, but rather by the mediation of the species. Finally, *in quid* is added to distinguish [the most spe-

cific species] from difference, accident, and property, just as was said in connection with the definition of genus.

The second definition of 'species' is 'a species is that which is placed under a genus'. And it needs to be supplemented thus: 'a species is that which is predicable *in quid* of many things and is under a genus'.

Also the third section is a description of 'species', namely, 'a species is that of which a genus is predicated *in quid',* [to which] add: 'directly and immediately'. And I say: 'directly' so as to exclude difference, of which a genus may be predicable *in quid,* but not directly; rather, a difference is predicable directly of its genus, as a determination of its determinable. And I say 'immediately' so as to exclude individuals.

2.3.2 The division of species and the clarification of the members of the division

> And 'species' is divided into 'most specific species' and 'subaltern species'. A most specific species is a species that cannot be a genus, or under which there cannot be another, inferior species; a subaltern species is a species that is also a genus, or, under which there is another, inferior species.

This whole part is absolutely clear in view of what was said earlier. For just as a most general genus is a highest genus [*supremum genus*], so is a most specific species a lowest species [*infima species*]. Still, a species is not said to be subaltern [*subalterna*] because it is under another species [*quasi 'sub altera specie'*], but because under it there is another species [*sub ea est altera species*].

2.3.3 A corollary

> Therefore anything between a most general genus and a most specific species is a genus and a species, but in respect of different things; for it is a genus with respect to its inferiors and a species with respect to its superiors.

This part is especially clear in the figure that is usually called 'the tree of Porphyry', but by those intermediates we mean only predicables *in quid,*

thereby excluding differences, which are neither species, nor genera, although they are between a most general genus and a most specific species.

2.3.4 An explanation of what has been said

> To render this even more clear, let us take an example in one category, say, 'substance', which is a most general genus; under this there is 'body', under 'body' there is 'animate body', under 'animate body' there is 'animal', under 'animal' there is 'rational animal', under which there is 'man', and under 'man' there are the individuals, such as 'Socrates' and 'Plato', as is clear in [figure 7].

In the construction of this diagram the subordinate genera and species should be placed directly under each other. Thus 'substance' is the most general genus, for there is no other genus above it, and 'man' is the most specific species, for there is no other species under it, but only individuals; but the intermediates are genera and species, as 'body' is a species of substance, and is a genus of 'animate body'. And it is generally true that in this diagram the differences by which those genera are divided into their species are placed on the side; but this is dealt with in the next chapter.

2.3.5 The description of individual

> An individual is that which is predicated only of one thing, as 'Socrates' and 'Plato', and 'this man' or 'this donkey'.

Since he [the author] has spoken about individuals, in the final part he describes 'individual' thus: an individual is what is predicable of only one thing. But there are some objections to this description.

1. It seems that 'individual' is predicated of many things, for we truly say that the term 'Socrates' is an individual and the term 'Plato' is an individual, and so forth.
2. Again, the term 'John' is an individual, but it is predicated of many things, as I am John and you are John, and so on for many others.
3. Again, the term 'this man' is an individual, but it is predicated of many

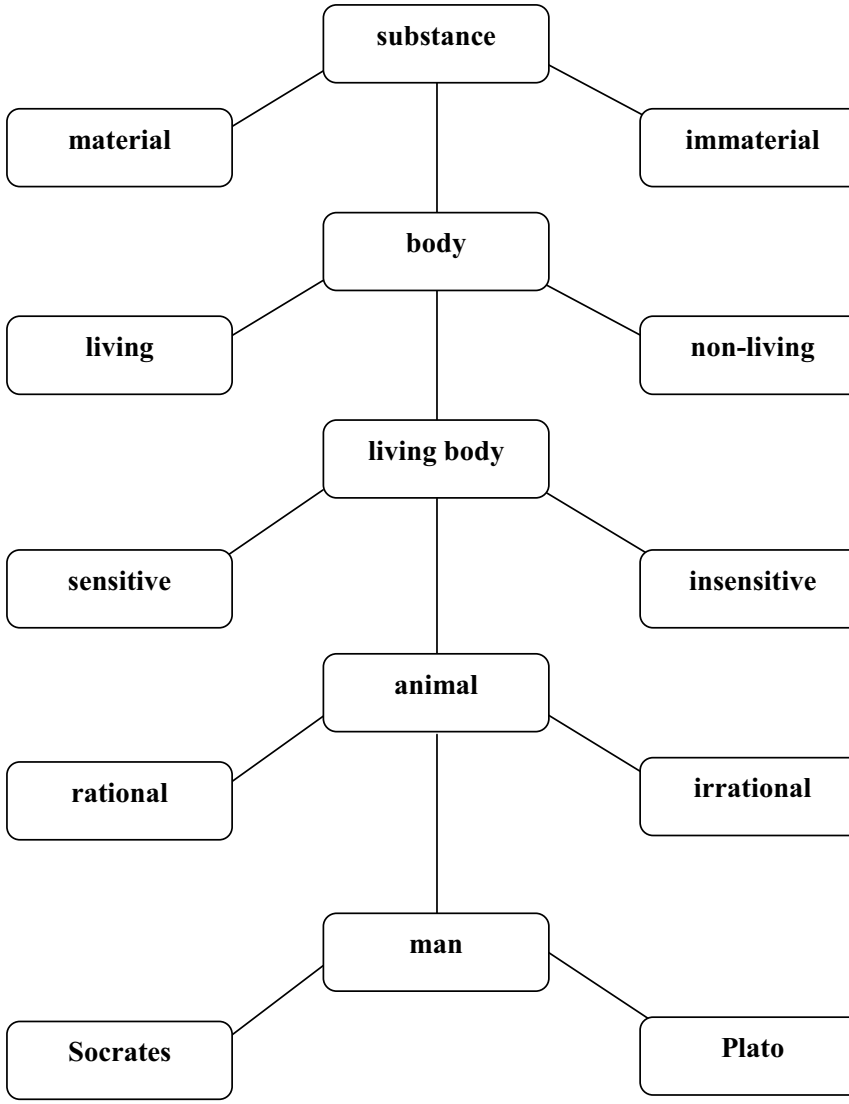

Fig. 7. The Tree of Porphyry

things, for of whichever man we point to it is true to say that this is this man.

4. Again, even if the name 'Robert' signified only this man, it would still be predicated of many terms: for Robert is a man, and an animal, and white, and educated; then convert these propositions, and the term 'Robert' will

be predicated of all these terms, namely, 'man', 'animal', 'white', 'educated'; therefore, it is predicated of many things.

The solutions of objections of this kind are easy.

To the first I reply that the term 'individual' is not an individual, just as the term 'man' is not a man; indeed, the name 'individual' is a name of second intention, suppositing for many terms, and it is one species among the species and names of second intentions.

To the second it was said before that the spoken name 'John' is not predicated of me and of you univocally, for it was not imposed by one [act of] imposition and according to one concept [*ratio*] to signify me and you.

Similarly, I also say that the utterance 'this man' is not predicated of Socrates and of Plato according to the same concept, for different acts of pointing are required, one to Socrates, and another to Plato, and to those different acts of pointing there correspond different concepts, of which one supposits only for Socrates and the other only for Plato.

About the final query it was said earlier that even if an individual or singular term is thus predicated of many terms, it supposits only for one thing. Therefore the description of 'individual' may be expounded so that 'an individual is what is predicated only of one thing' amounts to '[an individual is what] supposits only for one thing', or 'an individual is what can be predicated of one thing only or of many suppositing for only one thing'.

But there is another reasonable doubt concerning both 'individual' and 'species', namely, whether the term 'god' is an individual or a species. And it seems that it is an individual, for there are not, and there cannot be, many gods; therefore it supposits only for one and cannot supposit for many.

Solution: I reply that it is a species. For although on the part of the thing signified it is impossible that it should supposit for many, it is nevertheless not repugnant that it should supposit for many, either on account of its mode of signification, or because of the mode of its imposition. Proof: those who know the mode of signification and imposition of the term 'god' can opine or imagine in accordance with that imposition that there are many gods; and if there were many gods, similar to the one who is, the term 'god' would still supposit for each one of them, without a new imposition; and the same goes for the terms: 'sun', 'moon', 'world', and the like.[22] But someone who knows the mode of signification and imposition of the individual term 'John' (according to which it signifies me) cannot opine that in accordance with that imposition it would signify someone else; and if there happened to be a thousand others entirely similar to me, still, none of them would by that imposition be called

22. See ibid., bk. 7, q. 20.

'John'; for it is incompatible with [the mode of signification and imposition of] a singular term that on account of its mode of signification or imposition it should supposit for another [person], except by another imposition.

2.4 Chapter 4: On difference

2.4.1 On the name 'difference'

(1) 'Difference' is taken in three ways, namely, commonly, properly, and even more properly. (2) A difference is common when something differs from another in respect of a separable accident, as the sitting Socrates differs from himself not sitting or from something else. (3) A difference is proper when something differs from another in respect of an inseparable accident; an inseparable accident is one such as snub-nosed, or aquiline, and the like. (4) A difference is said to be even more proper when something differs from another in respect of a specific difference, as a man differs from a horse by [being] rational. (5) And it is in this last way that 'difference' is taken here, and [in this way] it is one of the five predicables.

The fourth chapter of this treatise is about difference. It contains five principal parts: the first part distinguishes several senses of the name 'difference' and selects the sense intended here, in the second and third parts two descriptions of 'difference' in the sense intended here are provided, the fourth part makes a notable point, and the fifth part is a corollary.

The first part has five sections: the first is a three-member distinction of 'difference', the next three provide explanations of those three members, and the fifth concerns choosing the member intended here.

The first section says that 'difference', i.e., the name 'difference', is taken in three ways, namely, commonly, properly, and even more properly, and this will be obvious by the exposition of the subsequent members.

In the second section it is said that a difference, commonly called so, is that by which something is said to differ, either from itself or from something else, in respect of a separable accident, as Socrates from Plato, because the one is sitting and the other is standing; or even as we would say that the sitting Socrates differs from himself not sitting. But we should note that it is not a proper locution to say that the same thing, on account of any accidents coming to it,

would ever differ from itself; rather, it is understood to differ from itself in the sense that it is related either to a place or to some other accident differently or in a different manner than it was before or will be later; but this is not what makes the same thing differ from itself, but rather makes its accidents, or some other things, be related to it otherwise, or not similarly, earlier and later. Likewise, properly speaking, Socrates and Plato do not differ by their accidents, but by themselves, namely, the one from the other and conversely.

But less properly speaking the white Socrates and the black Plato differ by whiteness and blackness, given that we interpret 'differ' as 'are dissimilar'; and thus, if both were white, they would be said to be nondifferent, i.e., similar with respect to color, although each of them would still differ from the other and the color of each would differ from the color of the other.[23] And so even if Socrates and Plato are said to differ in respect of sitting and standing, this means only that they are differently, i.e., non-similarly, related to [their] places, or that their members are differently related to each other.

The third section says that a difference is properly called so, when one thing is said to differ from another by an inseparable accident. What it is that should be called an 'inseparable accident', however, will be dealt with in the chapter "On Accident." And this part should be expounded analogously to the previous one; for this is the manner in which we say that Socrates differs from Plato by blindness or snubness of nose, if he is blind or snub-nosed and Plato is not.

The fourth section says that a difference is even more properly called so, when one thing is said to differ from another in respect of a specific difference, that is to say, [when] on account of the differences by which they differ they are placed under diverse species or even are diverse species.

In the last section he [the author] says that it is in this last sense that he intends to speak about difference, and that it is in this sense that difference is one of the five predicables, distinguished from the predicables of genus, species, property, and accident. And from this it clearly follows that 'difference' taken in this last sense is a significative term, for other things [i.e., things that are not significative terms] are not predicable.

But then it is queried: "How, then, does a man by such a difference differ from a horse?—for they do not differ by significative terms, but by their substance." Solution: I say that a term like 'rational' is said to be the difference of man not because it is by [this term] that man differs from other things, but because it is a suitable middle term to argue that a man differs from a horse or

23. The color of Socrates, i.e., his whiteness, would still not be numerically the same thing as the color of Plato, i.e., his whiteness.

a goat, namely, by arguing in the following way: 'No horse is rational, every man is rational; therefore, no man is a horse'; from which it follows with constancy[24] (namely, if both exist) that a man differs from a horse.

And I believe that this is how we have to understand 'difference' [also] in the first and in the second senses, namely, that 'difference' is taken there for a term that is called 'accident', whether separable or inseparable. For the terms 'sitting' or 'blind' are said to be differences not because it is by them that Socrates and Plato differ, but because they are the middle terms of arguments [showing] that they differ; for if Socrates is sitting or is blind, and Plato is not, then it follows that Socrates differs from Plato if both exist.

2.4.2 *The definition of difference*

> And difference is defined thus: a difference is that which is predicated of many things differing in species in response to the question 'What is it like?' [*in eo quod quale*], as 'rational' is predicated of man and of God, who differ in species, and [is predicated] in quale, because if it is asked: 'What is a man like?', it is appropriate to reply: 'rational'.

This definition is certainly in need of exposition and supplementation. For the term 'white', which is not a specific difference, but an accident, is suitably predicated of many things differing in species in response to the question 'What is it like?' [*in quale*], posed in respect of a man and a horse. Therefore Porphyry correctly says that to this definition it has to be added that [what a difference signifies] 'contributes to the being [of the thing]' [*conducit ad esse*],[25] i.e., that [a difference] is predicated essentially, as opposed to denominatively, which involves some extrinsic connotation, as in the predication of property and accident. And then the definition has to be supplemented thus: 'a difference is what is predicated essentially of many things . . . etc.'. And 'essentially' is put there to exclude property and accident, and "in response to the question 'What is it like?'" [*in eo quod quale*] is put there to exclude genus and species, which are predicated in response to the question 'What is it?' [*in quid*].

But then, again, a serious doubt arises. For it is likely that there are specific differences constitutive of most-specific species [*species specialissima*] and con-

24. Constancy *(constantia)* is the assumption that a term is not empty.

25. See Porphyry, *Isagoge,* in *Five Texts on the Mediaeval Problem of Universals,* ed. P. V. Spade (Indianapolis: Hackett, 1994), p. 10.

vertible with those species, [this being a question] that should be investigated in [connection with] bk. 7 of the *Metaphysics*.[26] But if there is such a difference, then it is not predicated of many things differing in species, but of one species and only of the individuals that are contained under that species. And so this definition would not apply to it; therefore, it would be safer to omit the part 'differing in species', while retaining the rest.

2.4.3 Another definition of difference

It is also defined thus: [a difference] is that by which a species has more than a genus has, as 'man' has more than 'animal' has, because of the differences 'rational' and 'mortal'.

This definition needs to be expounded so that a difference is what a species receives in its definition along with the genus; therefore, in the definition of species one must also provide the difference along with the genus or along with the definition of the genus.

2.4.4 A notable point

And we should know that the same difference is said to be divisive and constitutive, constitutive of the species and divisive of the genus. For example, the differences 'rational' and 'irrational' divide the genus 'animal', for we say: 'some animals are rational, some are irrational', and the same differences added to 'animal' constitute different species, namely 'man' and 'brute'.

This part is obvious from the tree of Porphyry, understanding by 'constituting a species' that the definition of species is constituted from the genus and the difference.

26. Buridan, *Quaestiones in Aristotelis Metaphysicam*, bk. 7, q. 17.

2.4.5 A corollary

> And for this reason Boethius said that only a species is defined, for a definition should be given in terms of the genus and the difference or differences, and only a species has a genus and a difference.

We should note that a purely quidditative definition has to be given in terms of the genus and the difference of what is defined, although there are other kinds of definitions, such as causal definitions, or those that only give the meaning of a name [*solum dantes quid nominis*] (these being called 'descriptions'), which are not given in terms of the genera and differences, properly speaking, of the terms defined. But these will be adequately dealt with later.[27]

2.5 Chapter 5: On property

2.5.1 The diverse senses of 'property'

> (1) Something is called a 'property' [*proprium*] in four ways: in the first way it is that which applies to only one species, but not to everything contained under it, just as to be a doctor, or to be literate, applies to man; (2) in the second way it is that which applies to everything contained under a species, but not only to one species, as to be a biped applies to man; (3) in the third way it is that which applies to all and only [those things that are contained under a species] but not always, as to become white-haired applies to man; (4) in the fourth way it is that which applies to all and only [those things that are contained under a species] and always, as to be able to laugh applies to man; for someone is said to be able to laugh [*risibilis*][28] not because [he] always actually laughs, but because [he is] always capable of laughing. (5) And it is in this last way that something is properly called a 'property' and is one of the five predicables, as distinguished from the other four, namely, genus, species, difference, and accident.

27. They are dealt with in 8.2.

28. The predicate *risibilis,* 'able to laugh', was used as the standard example of a property of man in the technical sense described here. For the sake of simplicity, whenever the context allows, I will translate *risibilis* as 'risible', not in the sense of 'ludicrous', but always in the sense of 'able to laugh'.

This chapter is about property [*proprium*]. It has two main parts: the first distinguishes several senses of 'property' and selects the intended one, and the second describes 'property' itself.

The first part has five sufficiently obvious sections, but so [understood] that it is of no account whether the examples are true or not, for examples need not be verified, as is said in bk. 1 of the *Prior Analytics*.[29] So it need not be true that every man is a biped, nor is it true that only men become white-haired, for many other animals become white-haired just as humans do.

Indeed, one may even doubt whether the terms 'man' and 'able to laugh' are convertible, for something that is not a man is able to laugh. Proof: 'able to laugh' means the same as 'possible that [he or she] laughs'; but it is possible that the Antichrist laughs (for perhaps he will laugh, and he who sometime will laugh can laugh), but he is not a man;[30] therefore, although it is conceded that every man is able to laugh, it is still not conceded that everything able to laugh is a man. But perhaps the terms 'man' and 'able to laugh' restricted to those that actually do exist are convertible, so that this follows: every man who exists is able to laugh, and everything able to laugh that exists is a man.

In the last section of this part it is stated that 'property' in the fourth sense is one of the five predicables, as distinguished from genus, species, difference, and accident. Therefore we have to say that 'property' in the three earlier senses belongs to the predicable of accident.

2.5.2 *The definition of property*

(1) Further, it is defined by Aristotle thus: a property is that which is predicated conversely of the thing but does not indicate the quiddity of the thing. (2) [The part] 'does not indicate the quiddity of the thing' is added to exclude definition; for a definition is predicated conversely of the thing, and indicates the quiddity of the thing, as 'animate sensible substance' is [predicated conversely] with 'animal' and indicates its quiddity, for a definition is given by the essentials.

This part has two sections, namely, the definition of 'property' and the exposition of the definition. For the definition is understood in such a manner that when we say 'predicated conversely of the thing', it should be glossed:

29. See Aristotle, *Prior Analytics* I.41.49 b34–37.

30. In other words, he is not a man, provided he is not born yet, but he will be a man, after he is born.

'that is, of the subject of which it is said to be the property'. And by 'predicated conversely' we should understand that each is predicable universally of the other, as, for example, if 'risible' is taken to be the property of 'man', then it is true to say that every man is risible and everything risible is a man. But by 'does not indicate the quiddity of the thing' we should understand that it is not predicated essentially, but denominatively.

We call the predication of a term of another 'essential' if neither of these two terms adds some extrinsic connotation to the things they supposit for. Therefore, although the term 'animal' signifies more [things] than the term 'man', nevertheless, it does not appellate over and above the signification of the term 'man' anything having to do with man, i.e., as something pertaining to man [*per modum adiacentis homini*].[31] A predication is called 'non-essential', or 'denominative', if one term of it adds some extrinsic connotation over the signification of the other, as for example 'white' supposits for a man and appellates whiteness as pertaining to him. Therefore the predication 'A man is an animal' is essential, whereas the predications 'A man is white' or 'A man is risible' are denominative, for 'risible' appellates the act of laughing, although with the modality of aptitude (because 'risible' means the same as 'can laugh').

So the definition of 'property' should be so expounded that a property is something predicable of a common subject conversely and nonessentially. And I say 'predicable of a common subject' for, if it were conversely predicated of a singular term, as in saying: 'this man is this white [thing]', then the term 'this white thing' would be a singular term, and then it would not be properly called a 'predicable', in the way we intend [to use this term] here, as was said above. And by saying 'conversely' it is distinguished from accident, and also from genus and species. By saying 'nonessentially' it is distinguished from *definition,* which is predicated of its *definitum* convertibly, and also essentially. And by this it is also distinguished from difference, for many differences are predicated convertibly of the species that they constitute under the genus, as for example 'sensible', i.e., 'sensitive', [is predicated] of 'animal'; but they are predicated essentially and without extrinsic connotation, except grammatically[32] ([for] otherwise they would be predicables such as properties or accidents). Nevertheless, we often use properties in the place of essential differences, because there are no names imposed on those essential differences.

Next we should also note that some believe that a property should be predicated only of a species and its individuals. But this is not correct; rather, just

31. See 4.5.

32. The qualification "except grammatically" probably refers to the connotation of some accident indicated by the grammatical form of the term, such as gender, which, nevertheless, need not be part of the term's signification in the strict sense.

as there are properties of species, so there are properties of genera, indeed, it is stated in bk. 4 of the *Metaphysics*[33] that being *qua* being has some properties, as do number *qua* number and what is movable *qua* movable, etc.

We should also note that even though a subject and its attribute [*passio*][34] are mutually [*conversim*] predicated of each other, the predication of the attribute of the subject is indirect, nor do we say that the subject belongs to the predicable of property, but that the attribute does, for from the connotation that the attribute adds to the subject there results denominative and not essential predication. What are called 'subject' and 'attribute' are terms suppositing for the same things, one of which adds some extrinsic connotation over the signification of the other in the above-described manner; and the term that adds this connotation is called the 'attribute' of the other term, and the other term is called the 'subject' of the former.

2.6 Chapter 6: On accident

2.6.1 The definition of accident

> An accident is what belongs and does not belong [to a subject] without the perishing of the subject [*adest et abest praeter subjecti corruptionem*], as white, black, or sitting; for these may belong and not belong [*adesse et abesse*] to a man without his perishing.

The sixth chapter is about accident. It contains five parts, namely, three definitions of 'accident', one division, and the resolution of a doubt.

But it is immediately objected to the first definition that it is not valid, for it applies to things other than accidents; for a substantial form is not an accident, but a substance, yet it can belong and not belong to its subject, namely, prime matter, without the perishing of that subject.

For the solution of this objection and for the sake of the clarity of the whole chapter, we should note that the name 'accident' is taken in two ways that are relevant here. In one way, insofar as it supposits for everything that is not a substance, and thus the whiteness inhering in the wall, the heat inhering in fire, and coldness inhering in water, and so forth, are called accidents. And it is obvious that such accidents are neither predicable nor subjectible in propo-

33. Aristotle, *Metaphysics* IV.2.1004b11–17.

34. See 1.1.1 n. 6.

sitions, for they are not significative terms. Therefore it is clear that neither our author, nor Porphyry meant [to speak about] accidents in this sense, for they intended to speak only about predicables.

In another fashion the name 'accident' is taken for significative terms that are not predicable of their subjects either convertibly or essentially. For it is in this way that the terms 'white', 'black', 'sit', 'stand' are said to be the accidents of the term 'man'. Hence it is clear that, taking the terms significatively, or personally,[35] it is not true to say that [a] white [thing] or [a] black [thing] is an accident, either in the first or in the second sense; rather, it is a substance. For if a man is white, then a white thing is nothing other than that man who is white and who is a substance, and he is neither predicated nor subjected.

And from this we should immediately infer that 'belonging' [*adesse*] is not taken here for 'being in by inherence in the strict sense' [*pro inesse secundum inhaerentiam proprie dictam*], as whiteness is in the wall, or knowledge in the soul, or form in matter. But by 'belonging' to some subject we should understand 'being predicated truly and affirmatively' of it, and by 'not belonging' to a subject we should understand one of two cases in disjunction. The one of these is that a predicate is said not to belong to a subject if it is truly denied of it, and in this way 'white' does not belong to 'man' if it is true to say that a man is not white. The other case is when that predicate is truly affirmed of some other, external thing. For example, although every horse is colored, the predicate 'color' would be said not to belong to 'horse', for the reason that it would be said of a donkey, which is not a horse.

Or we can put this in different terms, but the point is the same, namely, that by a term's 'belonging to' another we mean that it is truly affirmed of the other or conversely, and by its 'not belonging' to another we mean that it is truly denied of the other or conversely. For it is in this way that we say that 'colored' does not belong to 'horse', because although it is not true to say: 'A horse is not colored', we can truly say 'A colored [thing] is not a horse'. And thus it is obvious (if we take 'belonging' and 'not belonging' not for actuality but for aptitude, as we should) that by 'may belong' we understand the same as by 'may be predicated affirmatively', and this is [for something] to be predicable, and by 'may not belong' we understand that it is not predicated convertibly. And thus the sense of this description is that an accident is something not convertibly predicable of a subject of which it is said to be an accident. And we should add 'not essentially', so that by 'not convertibly' an accident differs from a property, and by 'not essentially' it differs from a genus, a species, and a difference. And then this is a correct definition of 'accident', insofar as it is said to be one of the five predicables, distinct from

35. This means taking the terms to stand for what they ultimately signify. See 4.3.

genus, species, difference, and property. And it is obvious that the argument concerning substantial form does not apply to this exposition.

But it is still queried why the author, and even Porphyry, adds: 'without the perishing of the subject'. I reply that just as in logic by the 'constancy' of terms [*per constantiam terminorum*] we understand that they supposit for something or some things, so by the 'perishing' of the subject we understand that it ceases to supposit for something, so that it supposits for nothing. Therefore to designate nonconvertibility, it was indeed necessary to add 'without the perishing of the subject'. For even if we supposed that the terms 'thunder' and 'sound made in the clouds' were convertible, the one nevertheless could truly be denied of the other, if the term 'thunder' supposited for nothing, so that nothing would be a thunder; therefore not belonging without the perishing of the subject in the way indicated does not remove convertibility, but it would remove it if the negative [proposition] were true, while 'thunder' supposited for something. So finally it appears to me that the following is a manifest description of 'accident': 'an accident is something predicable of a subject neither convertibly nor essentially', nor is any other [description] valid, except insofar as it coincides with this one.

2.6.2 *Another definition of accident*

It is also defined thus: an accident is what is neither a genus, nor a species, nor a difference, nor a property, but is in a thing.

Note that by its 'being in a thing' [*inesse*] we should understand that it is predicable of something affirmatively and truly, and by this, that it is said to be a predicable. And this description is clear if 'predicable' is exhaustively divided into these five predicables.

But there is a serious doubt regarding this point. For a definition is a predicable, since in bk. 1 of the *Topics*[36] it is posited as a predicate, but it is not a genus, nor a species, nor a difference, nor a property, nor even an accident. And since 'predicate' and 'predicable' do not differ, except by actuality and aptitude, it is quite puzzling why, despite the fact that Aristotle in bk. 1 of the *Topics* posited four predicates, Porphyry posited five. Again, since the categories as well as the predicates or predicables are distinguished in terms of modes of predication, why do not we get the same number of the former and of the latter?

36. Aristotle, *Topics* I.5.101b38–102a5.

I reply first that under the same common [term] sometimes we get more, sometimes fewer members, according as to whether we make more or fewer subdivisions. Thus when I say: 'everything that is predicated of something is predicated of it either essentially or accidentally (i.e., denominatively)', then by adhering to this division I have only two first species of predicables. But if I divided essential predicables into predicables *in quid* and *in quale,* and accidental predicables into convertible and non-convertible, then I would have four species of predicables. But again, when I divide predicables *in quid* further into two, leaving the others undivided, I have the fifth, namely, species; and if I divided genus still further into most general and subaltern genus, then the number of predicables would grow, and would grow even further if I divided the most general genera into the ten categories. Thus the division of predicables into the ten categories is not the first division of the name 'predicable' but is a division of one of its species, namely, of 'most general genus'.

Next I should also emphasize that 'predicate' is the correlative of 'subject', and 'predicable' of 'subjectible'. Therefore predicates and predicables are divided in one way with respect to some set subject, and differently with respect to just any subject whatsoever that can be subjected. Thus predicables are distinguished by common divisions with respect to any subject indifferently, although only in direct and immediate predication. But the categories are distinguished with respect to a set subject, namely, primary substance, because some [predicates] are predicates of primary substance *in quid,* others *in quale,* others *in quantum,* and so forth. But in the *Topics* Aristotle considers predicates insofar as they are provable about substances by art [*terminabilia arte*]; and since singulars are to be omitted from the doctrinal art, he did not consider species, which is only predicable of singulars, to be enumerated among principal predicates in this discussion, but he posited it as the subject with respect to the predicates to be proved about it [*tamquam subiectum respectu praedicatonum de ipsa terminandorum*].[37]

Furthermore, also in the *Topics,* he primarily intended [to present] the art of proving the definition about its definitum; therefore he distinguished other predicates in relation to definition, as the principal predicate. Since, therefore, a definition has to be predicated essentially and convertibly, he distinguished one predicable by its not being predicated essentially nor convertibly, namely, *accident.* Therefore he placed every problem asking simply about the inherence in, i.e., the predication of a predicate of, a subject, under the art dealing with the problems of accident.

Next, something can be predicated essentially, removing convertibility, and

37. What Buridan has in mind here is the "termination," i.e., determination or solution of a question or problem by proving a certain predicate of a subject, namely, of a species.

this he posited to be genus; and since the name 'genus' does not totally cover this member, for many differences are predicated in this way, he reduced *difference* to genus, as something annexed to it. Then something is predicated convertibly but not essentially, and this he posited as the predicable of *property.* And finally *definition* is predicated essentially and convertibly, as it contains the whole, and it is the fourth predicable or predicate.

Porphyry, however, posited definition and species as one predicable, because they have the same mode of predication of their inferiors. But it was necessary to distinguish them in the *Topics,* for the most difficult exercise is to solve [*terminare*] the problem of definition in respect of the definitum by means of topical considerations; and this should be seen there in more detail.[38]

2.6.3 The third definition of accident

(1) Or thus: an accident is something that may or may not be in the same thing, as white or sitting in man. (2) And Porphyry said of these last two definitions that the second is better, because to understand the first, one should know what a genus is, what a species is, what a difference is, and what a property is, whereas the second is complete in itself for yielding the understanding of what is said by it.

The third part contains two sections, namely, a definition of 'accident' and its comparison with the previous one. Of the first we should say that it has to be expounded and supplemented exactly in the sense in which the first definition was expounded; for that is the sense in which it is correct, and otherwise it is invalid. And then the second section is clear.

2.6.4 The division of accident

Some accidents are separable, some are inseparable. Separable, such as white or sitting in man, inseparable, such as black in raven or white in swan.

Note that with respect to a singular term an accidental term is called 'inseparable accident' if it can never in the future be denied of [the singular term]

38. This is dealt with in Treatise 6.

as long as the latter supposits for something; but if it can be denied of [the singular term] while the latter supposits for something, then it is called a 'separable accident' with respect to the latter. And thus it is clear that the same term is called a separable accident with respect to something, while with respect to something else it is called an inseparable accident, as the predicate 'moves' is separable with respect to the subject 'stone', and inseparable with respect to the subjects 'sun' or 'moon'. And the predicate 'black' with respect to man is called a separable accident, whereas with respect to an Ethiopian man it is said to be an inseparable accident; and 'snub' is said to be inseparable from snub nose, although another nose may well be aquiline. And some are said to be inseparable by nature, as 'biped' from man, who is biped, but it is separable by force, as when one of his legs is cut off.

2.6.5 The elimination of a doubt

> And although it was said that there are some inseparable accidents, this, nevertheless, is not at odds with the definition of accident, in which it is said that it may and may not belong [to a subject], for, as Porphyry said, a raven can be thought to be white and a black man [can be thought] to be glistening with whiteness.

This part is posited to eliminate the serious doubt as to how the claim that an accident is inseparable from something can hold simultaneously with the claim that it may not belong to it. And Porphyry responds to this that an accident is said to be inseparable because in reality it cannot not belong to the subject, although we say that in thought it may not so belong, because we can think of the subject without such an accident.

But I do not find this solution satisfactory. For the part 'may not belong' is put in the definition of accident to the exclusion of property, and by this solution this difference would be eliminated, since someone could even think of a horse while believing that it cannot neigh, indeed, nor produce any sound at all; this could happen, if someone else told this to him, and he had never heard a horse neigh. Again, it is certain that it is a property of God to be creative, but Averroes, when thinking of Him, believed that He is not creative.

Therefore, it is better to return to what was said earlier, namely that an accident differs from a property because it may not belong to the subject of which it is said to be an accident so that it can truly be denied of it or conversely. Nevertheless, this point notwithstanding, it can correctly be said to be inseparable from that subject, or from some of its singulars insofar as it

cannot be truly negated of the subject while it supposits for something; for 'black' is separable from 'raven', insofar as it is truly affirmed of something else, as of coal, for which reason we can truly say that a black [thing] is not a raven; however, it is inseparable from 'raven' in the sense that it cannot be truly said that a raven is not black, while a raven exists.

2.7 Chapter 7: The Common and proper features of predicables

2.7.1 The comparison of all predicables among each other

(1) It is common to all predicables that they are predicated of many things, (2) and it is proper to each of them that it is predicated in the way made obvious by its definition.

This last chapter is called 'The Common and Proper Features of Predicables'; that is to say that it is about the agreements and differences of predicables between each other.

In some books this chapter is available, in some it is not.[39] Furthermore, in some it can be found in different formulations, inasmuch as it happened to suit those who added this chapter; therefore, I also provide a text that suits me. And I divide this chapter into six parts: the first will be about the comparison of all predicables together between each other, and one by one in general; the second will be about the comparison of genus, species, and difference taken together as opposed to property and accident taken together; the third will be about the comparison of genus and difference taken together as opposed to species; the fourth will be about the comparison of genus and species together with difference; the fifth will be about the comparison of genus and accident between each other; and the sixth will be about the comparison of accident as opposed to all the other predicables together.

The first part, in its first section, is clear insofar as it concerns a predicable properly so called, namely, insofar as it excludes the predications of singular

39. Buridan is probably referring to different versions of (Latin translations of) Porphyry's text he came across in various codices.

terms, as was said earlier. And the second section is manifest too, for every definition is proper to the definitum.

2.7.2 The comparison of genus, species, and difference taken together with property and accident taken together

(1) It is proper to genus, species, and difference together to be predicated essentially, whereas to property and accident [it is proper] to be predicated denominatively. (2) Again, it is common and proper to the former three to be prior, namely, for genera and differences to be prior to species, and for species to be prior to individuals, and for property and accidents to be posterior to their subjects.

In the second part there are two sections, namely, two comparisons. In connection with the first we declared in the chapter on property what we call 'to be predicated essentially' and what 'to be predicated accidentally' or 'denominatively'.

And we should note that Aristotle sometimes distinguishes univocal predication only from equivocal predication, but not from denominative predication, taking 'univocal predication' broadly, and in this way to be predicated univocally of many things is common to all predicables. Sometimes, however, he takes 'univocal predication' differently, more strictly, as it is distinguished both from equivocal and denominative predication; and in this way it is often conceded that property and accident are not predicated univocally, and that they differ from genus, species, and difference in this respect.

But concerning the second section we should realize that here we do not speak about priority with respect to the things signified or supposited for by the terms, for in this way genus, species, and difference, indeed, even accident and property supposit for the same things; rather, we speak about the priority of the concepts from which those terms are taken that are said to be genera, species, etc. For it is said in the preface of the *Physics*[40] that those things that are more universal, other things being equal, are prior and better known to us; but genera are more general than their species and differences, and species than their individuals. But how and whether this is true is to be determined demonstratively either in the preface of the *Physics* or in bk. 3 of

40. Aristotle, *Physics* I.1.24.

On the Soul.[41] But even if a difference were convertible with a species, and perhaps the species were better known than its difference by a confused concept, it is necessary, nevertheless, that the difference be known earlier than the species is known definitively; therefore, in this way it is to be conceded that the difference is prior to the species. As to property and accident, it often happens that a thing is known earlier by an accidental concept than by a proper substantial concept; however, as to definitive cognition it is necessary that substantial concepts be prior, for it is necessary that accidental concepts be defined by substantial concepts, in the way in which they have a definition, as should be seen in bk. 7 of the *Metaphysics*.[42]

2.7.3 The comparison of genus and difference taken together with species

It is common and proper to genus and difference taken together that they are definitive of species and are themselves undefinable, but a species is defined by a genus and a difference, and for this reason a species is said to be composed of a genus and a difference.

The third part is manifest and conceded. Whence, if a subaltern genus is defined, it is not defined insofar as it is a genus, but insofar as it is a species; and if some most general [*genera*] are described by Aristotle or by others, those [descriptions] are not essential definitions, of which we are speaking here, but descriptions based on certain of their properties [*proprietates*].[43] And what is inferred, namely, that a species is composed of a genus and a difference,

41. See Buridan, *Quaestiones super octo Physicorum libros Aristotelis,* bk. 1, q. 7.

42. Buridan, *Quaestiones in Aristotelis Metaphysicam,* bk. 7, q. 6. See Aristotle, *Metaphysics* 7.5.

43. Note that 'property' is being used here not as the translation of *proprium* but as that of *proprietas.* This is the relevant term that comes closest in meaning to our general usage of 'property' (which is far from unambiguous, though). In fact, perhaps the best translation of *proprietas* as Buridan uses it would be 'distinctive feature', insofar as it refers to some feature or attribute that belongs only to things of a certain kind but not necessarily to all of them (which is what distinguishes *proprietas* from *proprium,* cf. 3.2.9 n. 24., although Buridan occasionally uses the two terms interchangeably, cf. 3.1.9 n. 17.); however, given, e.g., the customary translation of *proprietates terminorum* as 'properties of terms', we can perhaps put up with this further ambiguity in our usage of 'property'. I will note, nevertheless, the difference in the Latin terminology wherever it is relevant.

should be expounded, as I believe, [thus:] 'a species, i.e., the definition of a species'.

2.7.4 The comparison of genus and species taken together with difference

Genus and species in relation to difference have [the feature] that they are predicable *in quid,* but difference is not, but rather *in quale.*

But it is queried how this is possible, for, in accordance with what was said earlier, a difference does not signify or connote anything more extrinsic than does a genus or a species. And it seems to me that this is only on account of the different grammatical modes of signification. For, as the Commentator says in bk. 12 of [his commentary on] the *Metaphysics,*[44] the grammarian observes that in many cases a disposition and what is disposed differ from each other, and thus he is moved to impose on them different names, such as 'whiteness' and 'white'. But since it is not his task to inquire whether the disposition and what is disposed differ in this way in everything or [if not in everything, then] in which things [they do and in which they do not], he, therefore, on account of a similarity to those cases in which these [namely, the disposition and what is disposed] are manifestly different, imposes also on other things names in the fashion of those appropriate to a disposition and what is disposed, or to a determination and a determinable, or even to what is determined, deriving the abstract from the concrete [form], or conversely; and he leaves it to the metaphysician to consider whether those names supposit for the same or for different things, but on the basis of the different grammatical modes of signification those names have different modes of predication.[45]

And the one is derived from the other as the abstract is from the concrete [form], as [in the case of] 'man', 'humanity', 'human', or even, in respect of God, 'God', 'Deity', 'divine'. And 'God' is not predicated *in quale,* but 'divine' is, as when it is asked 'What kind of [*quale*] being is the prime cause?', we can reply that it is a divine being. Therefore, this is how a difference is predicated

44. *Aristotelis Metaphysicorum libri XIIII cum Averrois Cordubensis variis in eosdem commentariis,* in Averroes, *Aristotelis Opera cum Averrois Commentariis* (Venice, 1562–74; reprint, Frankfurt am Main: Minerva, 1962), f. 322va I et seq.

45. For the significance of this passage from the point of view of Buridan's nominalism, see the introduction.

in quale, for it signifies in the manner of an adjectival determination; but the genus and the species are predicated *in quid,* for they signify in the manner of a determinable, or that which is determined.

2.7.5 The comparison of property and accident

It is common and proper to property and accident together that they are predicated denominatively and not essentially, and that they are posterior to those things of which they are said to be the property and accident, and they are not predicated *in quid,* but *in quale* or in any way other than *in quid.*

All the points made in this part have been sufficiently explained earlier.

2.7.6 The comparison of accident with all other predicables taken together

It is proper to accident, as opposed to the other four predicables, that it is predicated more or less of that of which it is the accident, as a man is said to be whiter or healthier than another, or even the same man is sometimes more and sometimes less white.

This last part is noted by Porphyry. But it appears to be doubtful: for although being susceptible of teaching is said to be the property of man, according to Aristotle, nevertheless, one man seems to be more susceptible, i.e., more apt to receive instruction, than another, and although 'virtuous' is the genus of 'chaste' and 'just', nevertheless, the same chaste and just person can be less virtuous at some time and more virtuous later, for virtue gets intensified and is rendered more perfect by the multiplication of virtuous acts, as is clear from bk. 2 of the *Ethics.*[46] Again, the name 'white' is the species of the individuals 'this white' and 'that white', but this white [thing] is said to be whiter than that one. Therefore it appears from all aspects that this [alleged] property is false.

46. Aristotle, *Ethics* II.1.1103b1–3.

To all these we should briefly respond that many specific and generic names receive comparison according to the grammarians, as do the names 'virtuous', 'white', 'just', and the like. For we say 'virtuous', 'more virtuous', 'most virtuous', and 'white', 'whiter', 'whitest', even though 'virtuous' is a genus of 'just' and 'white' is a species of 'colored'. But Porphyry's point is that if the positive form of a term receiving comparison in the aforesaid manner is a genus of a term, then its comparative and superlative will not each be a genus of the same term. For example, if 'virtuous' is a genus of "just', then 'more virtuous' and 'most virtuous' will not each be a genus of 'just', but will be its accidental predicate. For a genus has to be universally verified of any of its species; but although everybody who is just is virtuous, not everybody who is just is more or most virtuous.

And the case is similar where the species and the individual are concerned. For if the term 'white' is the species of the term 'this white', then the term 'whiter' is never a genus of 'this white'. For as long as the individual of the species supposits for something, it is necessary that the species be truly affirmed of it; but although it is necessary that this white [thing] as long as it is this white [thing] be white, it is, nevertheless, not necessary that it be whiter, but it should rather be said that just as 'white' is the species of 'this white', so also is 'whiter' of 'this whiter', and 'whitest' of 'this whitest'.

And we have to speak in a similar fashion about property and the subject of which it is the property; for if we take 'risible' as the property of 'man', then it is not possible for 'more risible' to be [also] its property. For if everything risible is a man, it is not true that every man is more risible, for there has to be someone risible who is not more risible. An accident, however, if it receives comparison, can be predicated as an accident with respect to the same subject, to a positive, comparative, and superlative degree, either successively, or perhaps even simultaneously, as fire is hot, hotter, and hottest. And this was what Porphyry meant; however, we should not say that this applies to all accidents, but merely to many.

Treatise 3
On categories

3.1 Chapter 1: Some preliminaries

3.1.1 The definition of equivocals

> Those [things] which have their name in common, but with respect to that name the concept [*ratio*] of [their] substance is diverse, are called 'equivocals', as [when both] a [real] man and a painted man [are spoken of by the name] 'animal'.

This is the third treatise of this work and it is about the categories. This treatise is found in many summulae, but in many it is not. And since Aristotle quite amply discussed the categories in his book *Categories,* I intend to deal with them briefly, gathering Aristotle's most notable remarks and providing as brief a text as I can.

This treatise will contain ten chapters.

The first will be about some preliminaries before the specific discussion of each of the categories. The second will be about substance, the third about quantity, the fourth about relation, the fifth about quality, the sixth about action and passion, the seventh about the remaining four categories, the eighth about the kinds of opposition, the ninth about the kinds of motion, and the tenth about priority and posteriority, togetherness, and having.

The first chapter will contain nine parts. The first three define equivocals, univocals, and denominatives. The fourth and fifth provide two divisions, the sixth and seventh two rules, the eighth divides incomplex terms into the ten categories, and the ninth concerns a certain property [*proprietas*][1] of those ten categories.

Concerning the first part we should note that equivocation sometimes is attributed to a significative utterance and sometimes to the things signified. For an utterance is called equivocal because it equivocally signifies several things, and the things signified are called 'equivocals' because they are equivocally signified by some utterance. But in this case it is not an equivocal [term], i.e., something equivocally signifying, that is defined, but rather 'equivocals', i.e., things signified equivocally; thus, the term 'equivocals' is so defined that it supposits for things signified equivocally by some utterance.

Next, we should note that in the phrase 'concept [*ratio*] of substance', 'substance' is not taken in the sense in which substance is distinguished from accident, for accidents may be signified equivocally just as well as substances; rather, 'substance' is taken here arbitrarily [*ad placitum*] for the thing signified, whatever it may be, so that by 'concept of substance' we should understand the concept according to which the thing is signified by the utterance. Again,

1. See 2.7.3 n. 43.

when we say, 'which have their name in common', we should not take here 'name' as it is distinguished from 'verb' and other parts of speech, for there is equivocation in verbs just as well as in names; rather, 'name' is taken here broadly, for any conventionally signifying utterance. So the sense of the definition is that the things are called equivocals, i.e., things signified equivocally by some utterance, which have the name signifying them in common, and whose concept of substance is diverse; that is to say, they are taken [*imposita sunt*] to be signified by that utterance according to diverse concepts and diverse impositions. But they would be univocals, i.e., univocally signified, if they were taken [*essent imposita*] to be signified by that utterance according to one concept and one imposition.[2]

We should also note that from this description of equivocally signified things we can derive the description of an equivocal term, i.e., one that signifies several things equivocally. For what is called an 'equivocal' in this way is an utterance signifying many things according to diverse concepts, and, correspondingly, what would be called a 'univocal' in this way is an utterance signifying many things according to the same concept and imposition. And the example is aptly chosen, for usually we call living and sensitive substances animals, but sometimes we call even [their] pictures on the wall animals, and then equivocally, because according to diverse concepts. And this is obvious, for if someone were to ask: 'Why do you call this horse, or donkey, an animal?', you will respond that you do so because it is a living and sensing or sensitive substance. But if someone asked: 'Why is this picture called an animal?', the answer would not be that it is so [called] because it is living and sensitive, but because it is an image or representation of a living and sensing animal. Therefore, the name 'animal' is equivocal, i.e., equivocally signifying a living animal and [its] picture. But the same name 'animal' is [also] univocal, i.e., univocally signifying living men and living oxen, for if you ask about each, namely about a man and about an ox, why it is called an animal, the same reason [*ratio*] would be given [in each case], namely, because it is an animated sensing or sensitive substance. And from this we manifestly infer that the same name with respect to some of its significata is equivocal, and with respect to some it is univocal; thus 'animal' is equivocal with respect to living animals and with respect to their pictures, and it is univocal with respect to all living animals, such as people, horses, and donkeys.

2. It is somewhat strange that Buridan here speaks about *things* being *imposed* to be signified by names in various ways, given that he would normally speak about *names* being imposed on, or being imposed to signify, things. But in the spirit of his own liberal attitude toward improper formulations I think we may also put up with this idiosyncrasy.

3.1.2 The definition of univocals

> Those [things] that have their name in common, and with respect to that name the concept of [their] substance is the same, are called 'univocals', as a man and an ox or a horse are animals.

This definition of univocals should be expounded entirely analogously to the previous exposition of the definition of equivocals. But from what has been said we should conclude that an utterance is not called equivocal because it signifies many external things but because in signifying those many external things, there correspond to it different concepts in the soul. Therefore we should not attribute equivocation or univocation to mental terms or propositions but to utterances signifying diverse things by the same or by diverse intentions.

3.1.3 The definition of denominatives

> Those [terms] that differ from some [other] only in *casus*[3] in respect of [the formation of the] name, [and] have appellation [from the other], as 'literate' from 'literacy' and 'strong' from 'strength', are called 'denominatives'.[4]

We should note that here those terms are described that cannot be predicated of their subjects essentially, but denominatively. Now, for a term to be

3. Since in his subsequent comments Buridan exploits certain ambiguities implied in this Latin term, instead of the usual unambiguous renditions, such as 'case', 'ending', 'termination', I decided to retain the original. The noun *casus,* deriving from the verb *cadere* (fall), primarily means 'falling,' whence it is extended to mean any sort of falling down and any sort of falling upon (let alone the further, but here irrelevant, sense of befalling), i.e., any sort of descent or derivation and any sort of application, and their results. Hence, *casus* in particular means a derived form of a word, e.g., a grammatical case of a noun (which explains the etymology of the English 'case'), or the termination or ending of such a word in which it differs from that from which it derives. But *casus* in the sense of 'falling upon' or 'application' may also refer in particular to the application of a predicate to a subject, which is another sense of the same word that Buridan is going to exploit below.

4. This is a notoriously difficult passage in Aristotle (1a 13–16). I give the translation here in the smoothest way (which is not to say that it *is* smooth in any acceptable sense) on the basis of the version of E. P. Bos's critical text and as to be consistent with Buridan's comments; but I must note that other, slightly different Latin versions would allow or even require a rather different construal of this sentence.

properly predicated denominatively, one [condition] is required on the part of the utterance and another on the part of the intention. For on the part of the utterance, a denominative term has to be concrete, deriving in its formation from its abstract form, as 'white' from 'whiteness'. But if the concrete form does not derive with respect to its formation from the abstract form, then it is not called its denominative. For example, even if someone is *studiosus* [virtuous] because of his virtue, the name *studiosus* is not the denominative of the name *virtus* [virtue].[5] Thus it is this condition, required on the part of the utterance, that is expressed by the previous description of denominatives when it says: "Those [terms] that differ from some [other] only in casus in respect of [the formation of] the name . . . are called 'denominatives'," i.e., [terms that differ only] with respect to the [formation of their] utterance. For it is necessary that they differ with respect to [the formation of their] utterance by casus, i.e., by the derivation [*cadendo*] or descent of the one from the other, and also that they differ in this way only in such a *casus,* so that they do not differ totally, without any derivation [*sine derivatione*], as is the case with 'virtue' and 'studious'.

Second, on the part of the intention it is required that the concrete term have appellation, i.e., that it appellate, or connote, some external disposition besides what it supposits for. Therefore, even if there were some derivation in the formation of the utterance, as [there is] in the case of 'man' [deriving] from 'manhood',[6] [or] of 'God' [deriving] from 'godhead', [or] of 'existent' [deriving] from 'existence', and so on in many other cases, still, nothing can be predicated denominatively here;[7] and this is what is noted by the above description when it says 'have appellation'.[8]

And we should note that the grammarian reasonably derives 'whiteness'

5. In Latin, *studiosus* (virtuous) is regarded as the concrete form of *virtus* (virtue), that is to say, *studiosus* would be defined as *quidam habens virtutem* (someone having virtue); still, since *studiosus* can by no means be regarded as deriving in its formation from *virtus* (in contrast to the English 'virtuous'-'virtue' pair), *studiosus* is not the denominative form of *virtus.*

6. This derivation is in the sense of 'humanity' or 'human nature', since this term would serve as the abstract counterpart of the term 'man', differing from it only in casus, as is the case with *homo* and *humanitas* in Latin.

7. This is because, in Buridan's view, these terms are absolute terms, lacking any extrinsic connotation, whence they cannot have appellation and thus cannot be predicated denominatively, either.

8. This is just another interesting example of how Buridan (much to the dismay of his translator) uses Aristotle's text to bolster his own logical theory, as if the latter were something directly implied by the former. But the fact of the matter is that Buridan's theory of appellation is related to Aristotle's remarks here in a rather oblique manner. See the introduction for more details.

from 'white', namely, the abstract [from] from the concrete. For we have the concept of 'white' or of 'just' naturally prior to the concept of 'whiteness' or of 'justice', as should be observed from elsewhere. Therefore it is understandable that the names 'white' and 'just' were the ones earlier imposed to signify.

Here, however, we seem to assert the opposite of this when we say: "as 'literate' from 'literacy' and 'strong' from 'strength'." But we should reply that this does not contradict the grammarian, for we are not talking about casus in the sense of [a word's] derivation from [the first] imposition; rather, by casus we mean its application to the subject in predicating it thereof. For an abstract term is not posited in order to be predicated of a subject, but a concrete term is; thus a man is said to be white, but not whiteness.[9]

Furthermore, we should note that in many cases an abstract connotative term is predicated of the subject just as truly as the concrete term, so that, for example, matter is not only deprived but is also a privation, and a magnitude is not only shaped [in some way] but is also a shape. Whence the question arises as to whether a predication such as 'Matter is privation' or 'A magnitude is a shape' is denominative.

To this I reply that such a predication is denominative from the point of view of intention but is not denominative properly speaking, for the requirement on the part of the utterance is not satisfied. Therefore it is not a proper locution, although it is a true predication, when it is said that matter is privation, or that a magnitude is a shape, or that an action is a passion, or that time is motion or that a blind [man] is a blindness. Therefore even Aristotle sometimes denies such predications,[10] by which denial, however, he does not intend [to say] that they are false, but only that they are improper, for they are not quidditative, whereas abstract terms were imposed principally for the sake of quidditative predications.

Finally, we should note that denominative predication is not distinguished from equivocal or univocal predication in the manner in which equivocals and univocals were defined above, but it is distinguished from essential or

9. As can be seen, in his reply to this objection Buridan gives another twist to his interpretation and interprets *casus* in yet another way. If we take casus in the sense of grammatical derivation, then the concrete form is prior to the abstract form, which was also confirmed in the previous paragraph by the philosophical point that our concrete concepts are prior to our abstract concepts. If we take casus in the sense of the application of the predicate term to a subject term, however, then the priority is reversed, for the abstract term is not imposed to be predicated denominatively of a subject; rather, it is imposed only to signify the connotata or appellata of the concrete term, whereas this connotation or appellation is a precondition of the predicability of the concrete term of a subject in a denominative predication. See the introduction for more details.

10. For example, Aristotle, *Categories* 10.12a39.

quidditative predication. Later on, however, Aristotle sometimes takes univocation more strictly, as we shall assert, distinguishing it from denomination and calling only essential predication 'univocal'.

3.1.4 The division of utterances

> Of those [things] that are said, some are said with combination [*complexio*], and some without combination.

The fourth part is clear, understanding by 'those that are said' the conventionally signifying utterances that are uttered by the mouth. For some of those are complex, and are called expressions [*orationes*]; others are incomplex, and are called words [*dictiones*].

3.1.5 The division of things that there are

> Of those [things] that there are, some are said of a subject, but are in no subject, others are in a subject, but are said of no subject, still others are said of a subject and are in a subject, and yet others neither are in nor are said of a subject.

The fifth part is easy to expound if it is interpreted as being about significative terms. But it cannot be correctly expounded as being about other things, since a man is no more said of a subject than is Socrates, for a man is the same as Socrates, but the term 'man' is said of a subject, namely, of an inferior term, for example, of the term 'Socrates'. Further, it is reasonable that the whole [passage] be interpreted as concerning significative terms, for those are what Aristotle intends to discuss in the *Categories*,[11] wherein he provides this classification. Let us say, then, that locutions are to be understood in accordance with their subject matter, as is remarked in bk. 1 of the *Ethics*.[12] Therefore, by 'those that there are' we understand nothing but significative terms that can be subjects or predicates. And then by 'being said of a subject' we understand

11. Ibid., 2.1a20–29.

12. Aristotle, *Nicomachean Ethics* II.2.1104a3.

being predicated quidditatively of an inferior term, and by 'being in a subject' we understand being predicated denominatively, and not quidditatively of a subject.

And then it follows that every universal term is said of a subject, because it has an inferior term under it of which it can be predicated essentially, and no singular term is said of a subject, for it has no [term] inferior to it.

Furthermore, no substantial term, i.e., a term from the category of substance, is in a subject, for it is not predicated denominatively. But every accidental term is in a subject, for it is predicated denominatively of a substantial term, at least, either itself, if it is a concrete term, or its concrete form, if it is an abstract term, such as 'whiteness'.[13]

Therefore, some [things] are said of a subject and are in no subject, namely, common terms from the category of substance, such as 'man' or 'animal'; others are in a subject and are said of a subject, as are common terms in the categories of the accidents, e.g., 'white' or 'colored', or even 'whiteness' and 'color', which do not denominate substances by themselves but by means of their concrete forms; others are in a subject, but are said of no subject, namely, singular terms [*individua*] of accidental categories, e.g., 'this white', 'this runner'; and still others neither are in nor are said of a subject, namely, singular terms of the category of substance, as with the terms 'Socrates', 'Plato', 'this man', 'this horse'.

And if Aristotle's examples appeared *prima facie* to require another exposition, I would reply that examples need not be verified,[14] as Aristotle himself says in bk. 1 of the *Prior Analytics*.[15]

13. Of course, Buridan cannot claim without qualification that every accidental term can be predicated denominatively of a substantial term, because abstract terms in the category of quality that signify, and hence in a proposition supposit for, individual qualities really distinct from substances (such as 'whiteness') cannot be truly predicated of any substantial term suppositing for substances. Hence, he has to accommodate these terms to his scheme by taking in their stead their concrete forms, which signify substances and connote qualities, whence in a proposition they can supposit for substances appellating their qualities, so they can be true of substantial terms signifying these substances, which are the things that have these qualities.

14. Obviously, Buridan's exposition here is quite at odds with Aristotle's text and intention, so it is no wonder that he wants to do away with this passage as quickly as he can. For an excellent "realist" exposition of the same passage see Thomas de Vio Cajetan, *Scripta Philosophica: Commentaria in Praedicamenta Aristotelis,* ed. M. H. Laurent (Rome: Angelicum, 1939).

15. Aristotle, *Prior Analytics* I.41.49 b34–37.

3.1.6 A rule

When something is predicated of something else as of a subject, then whatever is said of that which is predicated is also said of the subject.

Against this rule it is easily objected that although man is a biped and a biped is a bird, still, it does not follow that a man is a bird. There are two solutions to this. The first is that the rule is understood to concern universal predications but not particular or indefinite ones. And then the rule holds by the first mode of the first figure, for if every B is A and every C is B, then it follows by the first mode of the first figure that every C is A. The second solution is that the rule should be understood to concern predications wherein something is said of something as a subject in both premises, i.e., essentially, as superior of the inferior; and this is what Aristotle indicated by saying 'as of a subject'.

3.1.7 Another rule

Diverse and not subaltern genera have diverse species and differences; but nothing prevents subaltern genera from having the same species and differences.

We should note here that by 'not subaltern genera' we should understand genera neither of which is contained under the other, as animal and plant, or substance and quantity. Therefore, if such genera are found to have the same utterances for their species or differences, then this occurs by equivocation. But by 'subaltern genera' we understand here genera of which one is contained under the other, and then they necessarily have the same species and differences, for whatever is a species of the inferior is also a species of the superior genus, although not immediately, as for example all species of [the genus] 'animal' are also the species of the genus 'substance'.

3.1.8 The division of incomplex terms into ten categories

Of those [utterances] that are said without any combination, some signify substance, some quantity, or quality, or relation, or place, or time, or posi-

> tion, or habit, or action, or passion. Substance, as 'man' or 'horse', quantity, as 'two cubits long' or 'three cubits long', quality, as 'white', 'black', relation, as 'double', 'half', place, as 'in-this-place', time, as 'yesterday', position, as 'sits', 'lies', habit, as 'shod', 'armed', action, as 'cut', 'burn', passion, as 'being cut', 'being burnt'.

We should note that not every incomplex utterance falls under this classification of incomplex terms, but only those that taken significatively can be subjects or predicates. So, he ["the author"] says that some predicable terms signify substance without any extraneous connotation, and these are in the category of substance. Others signify, or connote, something in relation to [*circa*] substance, so that when they are said of a primary substance, they do not only signify what it is but also what it is like, if they are in the category of quality, and similarly with quantity and the others.

And we should know that Aristotle never provided an argument to show that there are no other categories besides these ten, nor would it be unacceptable to posit also others if other predicables were found that have different modes of predication, which are neither reducible to nor contained under the ones from which these ten categories are derived. In this way, however, there are ten categories, for among all non–equivocally predicable terms there are ten that are the most common, and they are called 'most general genera' [*genera generalissima*], under which all others are contained, so that we should understand the same by 'category' and 'most general genus' [*genus generalissimum*]. Or, alternatively, we call one 'category' the aggregate of a most general genus and all the predicables contained under it; and so we get the same number as with the most general genera.

3.1.9 A property of these ten categories

> It is a property [*proprium*], then, of these incomplex predicables that none of them taken alone is an affirmation or a negation, i.e., an affirmative or negative proposition, but it is from their combination that affirmations and negations result.

Aristotle proves this property of incomplex predicable terms by the fact that every affirmation or negation is true or false, and none of these is true or false on its own. For if you say 'man' or 'donkey' or 'runs', you do not say anything true or false, but if you say in combination: '[A] man runs', then you say something true or false.

Wherefore we should note that if I said: 'read', 'deny', I would not [thereby] say something true or false, unless we were to take the name 'I' implied, and we added it in our minds.[16] Further, the objection that some people make is not valid, namely, that we might, by convention, impose the term 'B' to signify precisely as much as does the expression 'A man runs', whence anyone uttering the incomplex utterance 'B' would say something true or false. Solution: I say that in this case the utterance 'B' would not be some predicable, unless it were taken materially, as neither is the expression 'A man runs'. But we understood the property [*proprietas*][17] in question to relate to incomplex predicables.

3.2 Chapter 2: On substance

3.2.1 The division of substance and the explanation of the members of the division

> (1) Substance is divided into primary and secondary substance. (2) A primary substance is what properly, primarily, and maximally underlies [*substat*], (3) or a primary substance is what neither is in a subject nor is said of a subject, as some man or some horse. (4) Secondary substances are the species within which the primary substances are contained, as well as their genera, such as 'man' or 'animal' [respectively].

The second chapter is about substance, i.e., about the category of substance. It contains nine parts: the first covers the division of substance into primary and secondary and the clarification of the members of the division; the second describes the difference between those that are in a subject and those that are said of a subject; the third is on the comparison between primary and secondary substances; and the remaining six parts describe six properties of substance.

The first part contains four sections. The first provides the division of sub-

16. *Lego, nego.* The conjugation of these verbs in Latin already indicates the first person, so they can be used also as complete sentences, without having to add explicitly the personal pronoun *ego.*

17. See 2.7.3 n. 43.

stance into primary and secondary substance; the second and third are two descriptions of primary substance; the fourth is a description of secondary substances.

As to the first section, and [in general] in connection with the whole chapter, we should take good notice of the fact that 'substance' is taken in two ways. In one way it supposits for real substances that subsist on their own, and for their parts; and in this way we classify substances into material and immaterial, and into animate and inanimate, and we also say that among generable things substances are composed of matter and form, and, taking the terms significatively, we say that animals are substances, and so are stones, plants, and the heavens; but this is not the way in which 'substance' is taken here. In the second way, 'substance' is taken to supposit for terms in the category of substance, i.e., for terms that signify substances in the first sense without extraneous connotation, as do the terms 'animal', 'man', 'Socrates'. Correspondingly, the term 'accident' is taken as it supposits for terms in the categories of accidents. So in the first way a man and a horse are substances, but the terms 'man' and 'horse' are not, whereas in the second way, conversely, the terms 'man' and 'horse' are substances, but a man or a horse is not. It is in this second way that 'substance' is taken here. And [what is so called] is not called 'substance' by reason of its 'underlying' ['sub-standing', *substare*] in the sense of subsisting on its own, for spoken terms are in the air and mental terms are in the mind as in their subject, even as whiteness is in the wall. Rather, it is called 'substance' because of its 'underlying' in the sense of *being subjected,* for substantial terms in denominative propositions are subjected to accidental terms by direct predication.

So it is in this second way that substances are divided into primary and secondary. And we call singular terms in the category of substance, such as 'Socrates' or 'Plato', 'primary substances', and we call universal terms in the category of substance, such as 'man' or 'animal', 'secondary substances'. So it is obvious that if 'substance' were taken in the first sense, Socrates would not be a primary substance to any greater extent than is [a] man or [an] animal, for Socrates is nothing else but a man and an animal. But taking 'substance' in the second sense, the term 'Socrates' is more of a substance and more of a primary substance than the term 'man', by reason of its being more capable of 'underlying' ['sub-standing', *substare*], or of being a subject; this is because the term 'Socrates' is subjected to the term 'man' in a direct predication, but not conversely. So this is how the first section of this part is to be understood.

The second section describes primary substance, stating that a primary substance is what properly, primarily, and maximally 'underlies', i.e., is subjected, both in quidditative propositions, for then it is subjected to secondary sub-

stances, and in denominative propositions, for then it is subjected to accidental terms. Let us say, then, that in this description 'underlies', i.e., 'is subjected', in a true affirmative proposition, is added for the sake of distinguishing [primary substance-terms] from fictive terms, which supposit for nothing, as in the case of 'chimera'. And 'properly' is added to exclude subjection in indirect propositions, in which secondary substances and accidental terms are subjected to primary substances, as opposed to primary substances being subjected to them. And 'primarily' is added to exclude accidental terms, which sometimes are subjected to each other, as when I say '[A] white [thing] is [a] sweet [thing]', or even '[A] white [thing] is [a] colored [thing]', in which cases they are not primarily subjected, for they require a substantive that is subjected to them further; this is why it is said in bk. 7 of the *Metaphysics* that [something] walking or healing or sitting is only because something is that is walking or healing or sitting.[18] But 'maximally' is added for distinguishing [primary substances] from secondary substances, which are not maximally subjected, as has been said, but rather the primary ones.

The third section is another description of primary substance, although it coincides in its claim with the first. And it should be supplemented by saying that a primary substance is a term that neither is said of a subject, i.e., [is one] that is not predicated essentially of an inferior (and this is added to distinguish it from secondary substances), nor is in a subject, i.e., it is not predicated denominatively of some subject by direct predication (and this is added to distinguish it from accidental terms). And in this connection Aristotle gives as examples of primary substances 'some man' and 'some horse'. Concerning this we should note that we should not require here the verification of examples, as is said in bk. 1 of the *Prior Analytics*.[19] For the terms 'some man' and 'some horse' are just as common as are the terms 'man' and 'horse', and so, properly speaking, they are not to be called primary substances; rather, they are put forth here in the place of terms such as 'Socrates', 'Plato', 'Brownie', 'Tawny'.

About the fourth section enough has been said, except that someone may have doubts concerning substantial differences, namely, whether they are primary or secondary substances. To which we should respond that Aristotle sometimes does not call them substances, because taken by themselves they do not retain the mode of being predicated of primary substances in response to the question 'What is it?', although it is this mode of predication from which the category of substance is taken, and by which it is distinguished from the other categories. But taking 'substance' more broadly, they are called sub-

18. Aristotle, *Metaphysics* II.4.1029 b13–14.

19. Aristotle, *Prior Analytics* I.41.49 b34–37.

stances, and secondary substances, for they do not belong in the categories of accidents, nor are they predicated denominatively of primary substances, but essentially, and because joined with genera in the definitions of species they are predicated in response to the question 'What is it?', and this both essentially and most properly.

3.2.2 *The difference between those that* are in *and that are* said of *a subject*

> It is obvious that those that are said of a subject are predicated of it both by name and by definition [*ratio*]. Of those, however, that are in a subject, some are predicated of that subject neither by name nor by definition [*ratio*], and some are predicated by name, but never by definition [*ratio*].

Since the philosopher has frequently spoken about *being said of a subject* and *being in a subject,* in this part he states their difference, which is obvious enough in the text, namely, [the difference] between those that are predicated essentially of their subjects, of which we said that they are said of their subjects, and those that are predicated denominatively of their subjects, of which we said that they are in a subject.

But then one might wonder that, if a denominative term is predicated of a subject by name, then how we can say that it is not predicated of this subject by its concept [*ratio*], i.e., by its definition [*diffinitio*], for this amounts to denying the maxim 'of whatever the definitum is predicated, the definition [*diffinitio*] is also predicated'.[20] To this I reply that Aristotle in asserting this difference did not want to deny the aforementioned maxim, but only wanted to say that in an essential predication the predicate, or the definition of the predicate, is the definition of the subject, or something pertaining to the definition of the subject, and this is not the case in denominative predication.

But then how will this be true in the case of the predication of a species of an individual, as when I say 'Socrates is a man', given that 'Socrates' does not have a definition? I reply that although properly speaking no individual has a

20. For example, since 'animal' is predicated of 'man', the definition of 'animal', namely, 'living sensitive substance,' also has to be predicated of 'man'. Buridan's problem here is that the same rule should apply in the case of denominative predications (e.g., if 'bachelor' is predicated of 'Socrates', then 'unmarried man' also has to be predicated of the same term), whereas the text states otherwise.

definition, nevertheless, we say that the definition of the species is somehow the definition of the individuals, for they do not have any other definition.

But a further doubt arises, because the things said in this part seem to contradict those points that had been stated earlier. For earlier we said that by 'being in a subject' we understand the same as by 'being predicated denominatively', and thus, whatever is said to be in a subject has to be predicated of that subject, at least by name, but the contrary of this is being asserted here.

Solution: I reply that Aristotle's words need to be carefully expounded here. For Aristotle held that all terms in the categories of accidents are in a subject, on account of [their giving rise to] denominative predication, and this comprised both abstract and concrete terms; the concrete terms are included, because they are predicated denominatively by their own names, but the abstract terms are not included here because they themselves are denominatively predicated by their own names, but rather because their concrete counterparts are denominatively predicated. And it is this difference that Aristotle wanted to indicate, namely, that 'white' is said to be in a subject because it is denominatively predicated by [its own] name, but 'whiteness' is not [said to be in a subject] on the same basis, but rather because its concrete form is predicated denominatively.

3.2.3 The comparison of primary and secondary substances

(1) Primary substances maximally are substances. (2) Also, among secondary substances species are more substances than are genera; (3) for all [these others] are either said of primary substances or are in them. (4) Whence it follows that if the primary substances were destroyed, it would be impossible for any of the others to abide.

In the third part there are four sections. The first states that primary substance maximally is substance. And I understand this insofar as [the term] 'substance' supposits for significative terms; for if we understand 'substance' in this way, then something is called 'substance' on account of its 'underlying', i.e., being apt to be a subject in denominative predications, and not being able to be predicated by means of direct predication. For this pertains to all substantial terms, but to no accidental terms. But then among substantial terms those are called maximally substances that are subjected to others in a quiddi-

tative predication, and nothing is subjected to them, and such are all singular terms in the category of substance, whence all such singular terms are called maximally substances.

But also, with reference to the second section, substance, i.e., a substantial term, is called more a substance, if it is more subjectible, i.e., if it is subjected to more [predicates], in quidditative, direct predications. And so, because a species is more subjectible than a genus, as it is subjected to the genus, but not conversely, it follows that, in accordance with this manner of speaking, a species is more a substance than a genus.

The third section proves the first. For that should be called maximally a substance, which is maximally subjected, both in quidditative and in denominative predications. But such are primary substances, i.e., singular terms in the category of substance, for all other terms are either said of them, i.e., are predicated [of them] essentially, or are in them, i.e., are predicated [of them] denominatively, in the above-described manner, and no other term is subjected to them in a direct predication. Therefore they are maximally subjected, whence they are maximally substances.

The fourth section concludes as a corollary that if primary substances are destroyed, it is impossible for any of the others to remain. And this is true in the sense that if no singular term in the category of substance supposited for something, although put into a proposition, then no other term would supposit for anything. And there is nothing wrong with this consequence even if its antecedent were impossible, because then the consequence is so much the more valid, since from the impossible anything follows.

3.2.4 First property: substances are not in a subject

(1) There are six properties [*proprietates*] that are usually ascribed to substance. The first is that of not being in some subject [*in subjecto non esse*]. (2) And properly speaking this is not [an exclusive] property [*proprietas*] of substance, for it applies also to others, namely, to substantial differences.

[The attribution of] this property is usually attacked immediately. For a substantial form is a substance, which, nevertheless, is in a subject, namely, in matter, as the soul is in the body; again, the foot of an animal, which is a substance, is in a subject, for it is in the whole animal. Further, since this property applies also to accidents, it is not [an exclusive] property of substance, prop-

erly speaking. The antecedent is obvious, for whiteness is not in a raven, and 'white' is not predicated of some subject, as of a raven; therefore, whiteness is not in some subject, even taking 'being in some subject' [*esse in subiecto*] in the sense of denominative predication.

Solution: We have to say that this property is attributed to substance in the sense intended in the *Categories,* namely, in the sense in which the name 'substance' supposits for terms in the category of substance, and by 'being in a subject' is understood the same as by 'being predicated denominatively'. And in this manner it is obvious, in accordance with what was said earlier, that this, namely, 'not being in a subject', applies to all substances, and it does not apply to accidents, for all accidents are predicable denominatively, either by means of their own name, or by the name of their concrete counterpart. And so it is clear that the first argument, about form that is in matter (as the soul is in the body), and about the foot of an animal, does not argue about substance in this sense, nor about being in a subject in this sense. But the second argument correctly concluded that the attribution of this property [to substance] was not suitable, properly speaking; whence we should say that it is a property of substance not to be in [any] subject [*non esse in subiecto*].[21]

Further, in the second section, it is said that this property is not exclusively a property [*proprie proprietas*] of substance, as it applies also to differences. For substantial differences are not predicated denominatively, but essentially, as they are placed in quidditative definitions. Now by this it is suggested that they are not substances, i.e., substantial terms; but this seems to be false, for they are in no category other than the category of substance. But this has already been discussed in the first part of this chapter; for a substantial difference in one sense is called a substance, and in another sense it is not.

21. The distinction Buridan applies here is between *in subiecto non esse* (not being in some subject, i.e., 'that there is some subject in which it is not') in the main text and *non esse in subiecto* (not being in any subject, i.e., 'that there is no subject in which it is'). In Buridan's regimented Latin it is the position of negation that expresses the distinction (which is a distinction of scope), but it is more appropriately expressed in English by the difference between 'some' and 'any' in these phrases.

3.2.5 Second property: secondary substances and differences are univocally predicated of primary substances

The second property ascribed to secondary substances and differences is that they are univocally predicated of primary substances.

We should realize that this property does not apply to primary substances. For primary substances are not predicated of something or of some things, except by indirect predication, which is not being considered here, or in the case when synonymous terms are predicated of each other, which is not our present concern either.

We should also note that 'univocal predication' is sometimes taken in a broad sense, insofar as it is distinguished only from equivocal predication, in the sense in which it was defined in the first chapter of this treatise; it is in this sense that accidents are properly predicated univocally of primary substances, as, for example, 'white' of 'Socrates' and 'Plato'. But in another way 'univocal predication' is taken in a stricter sense, insofar as it is distinguished both from equivocal and denominative predication, and in this way only secondary substances and substantial differences are univocally predicated of primary substances. This consideration notwithstanding, however, the genera are properly predicated univocally of their species in the accidental categories as well as in the category of substance.

3.2.6 Third property: every primary substance signifies this something

The third property assigned is that every primary substance signifies *this something* [*hoc aliquid*].

About this property Aristotle speaks in rather inappropriate terms, because of Plato's opinion, he having posited that secondary substances do not immediately signify singular substances, but universal quiddities, which he called 'ideas'. But, as far as the truth of the matter is concerned, we should say concerning this property that here by *this something* we have to understand singular and *per se* existing substances, as this man or this stone. And since substantial terms signify such substances, and do so without any ex-

trinsic connotation, they are said to signify such substances precisely. Accidental terms, however, even if they signify such substances, do so with some extrinsic connotation; therefore they are not said to signify this something precisely.

We should also note that we do not posit separate universals as did Plato. For secondary substances signify the same substances as primary ones, but differently, for primary substances signify one substance in a singular manner, whereas secondary substances signify many commonly, and indifferently. Since when the word 'this' is added to a common term, it turns it into a singular term, therefore we say that a primary substance more properly signifies this something than does a secondary substance, because it signifies a singular substance existing in a singular manner.

3.2.7 Fourth property: substance has no contrary

> The fourth property of substance is that a substance has no contrary; but this is not exclusively a property [*proprie proprietas*], for it applies also to quantity, as we shall state later.

The fourth property is to be understood as applying to substantial terms, those terms being called 'contraries' that are verifiable of the same subject, and of the same suppositum, successively but not simultaneously. For this is the manner in which the terms 'white' and 'black' are contraries, for it is possible that the same thing is first of all white, and then black, but never both at the same time. And it is irrelevant to this point whether substantial forms are contraries or not, for they are not substantial terms.

But the question is raised about differences, e.g., the terms 'rational' and 'irrational', as to whether they are contraries. And Aristotle appears to say that they are, in bk. 10 of the *Metaphysics*.[22] Now this is indeed true, taking the contrariety of terms in a broader sense, namely, as it applies to terms predicable of the same genus, but never of the same suppositum. But taking the contrariety of terms in the strict sense, strictly speaking, such terms are never contraries. For two conditions are required for the contrariety of terms in the strict sense, as I mentioned above: first, those terms can never simultaneously be verified of the same [term suppositing] for the same [thing]; second, they

22. Aristotle, *Metaphysics* X.9.1058a32, X.10.1058b26.

can [be verified] successively. Yet other conditions are required for contrariety in the strictest sense, as for example being maximally opposed, . . . etc. But we are not dealing with those for the moment; for the first of the just-mentioned conditions correctly applies to substantial differences, wherefore broadly speaking they are contraries, but the second can never apply to them, for what is rational will never be irrational, or conversely, given that these are substantial differences.

3.2.8 Fifth property: no substance is susceptible of more or less

> The fifth property is that no substance is susceptible of [being] more or less; but this is not an exclusive property of substance, as will be stated later.

To [the assignment of] this property it is immediately objected that primary substance was said earlier to be maximally a substance and species were said to be more substances than genera. Again, Socrates sometimes receives more or less from warmth or coldness, nevertheless, Socrates is a substance.

But to the second objection I reply immediately that this property has a bearing only upon substantial terms, whereas the objection concerned external substances existing *per se.*

As regards the first objection, however, we reply that substantial terms are correctly said to be more or less substances with respect to their greater or lesser capacity to underlie [*substat*], i.e., to be a subject [*subjici*], as was said earlier. But this property is to be understood in such a fashion that substantial terms taken significatively should not be predicated with the addition of the adverbs 'more' or 'less'. For we cannot say that Socrates is sometimes more a man, or [more of] an animal, and sometimes less, but we can say that he is sometimes more white, and sometimes less so; nor do we say that a man is more an animal than a horse, although we say that [a man] is a more perfect, or more noble, animal than a horse; this, however, is not in conflict with this property, for the terms 'perfect' and 'noble' are not substantial terms.

3.2.9 Sixth property: every substance is susceptible of contraries by its own change

The sixth property is what Aristotle states in the following terms: 'it seems to be most proper to substance that while it remains numerically one and the same, it is susceptible of contraries by its own change'.

It is difficult to expound this property correctly. It is true that Aristotle shows why he says 'by its own change'. For this is added to distinguish [this case] from [that of] a proposition [*oratio*] or opinion, which, while remaining numerically the same, is sometimes said to be true, sometimes false. For example, if the proposition [*oratio*] 'Socrates is sitting' either in the mind or in written form, or the opinion that Socrates is sitting, remained numerically the same, then while Socrates were sitting it would be true, whereas upon his standing up it would become false. And so a proposition or opinion, numerically the same, receives contraries, although it is not a substance. But this is not by the change of the proposition or the opinion itself; rather, this takes place by the change of the things signified by the terms of the proposition. For it is not the proposition or the opinion that is in motion, but Socrates, who is standing up. But a substance receives contraries insofar as it is changed as a subject, as when Socrates is now white, and later black, now warm and later cold.

From what has just been said, it seems to be obvious that this sixth property is assigned to substance insofar as the name 'substance' supposits for true, *per se* subsisting substances. For the term 'man' is not changed any more than the proposition or opinion when a man now becomes white and then black, or warm, or lukewarm, or cold.

Nevertheless, it seems, on the contrary, that this property cannot be expounded as pertaining to those *per se* subsisting substances. For either the word 'most' is an adjective construed with the name 'substance', or it is an adverb, construed with the name 'proper'. If it were understood in the first way, then the property would be false, for nothing is most, i.e., maximally a substance, except God or the heavens, neither of which is susceptible of contraries in Aristotle's opinion. On the other hand, if it is construed with 'proper', so that we say that this is most proper to substance, it would still be false, for it does not apply to all substances, as was said above, for it does not apply to God and to heavenly bodies.[23]

23. *Maxime substantiae proprium* [inserted on the basis of the critical edition] *videtur esse quod cum sit una et eadem numero, susceptibilis est contrariorum secundum suam mutationem.* Buridan's parsing of this sentence seems somewhat strained (even if we allow the medieval spell-

But perhaps we can avoid this by saying that we can expound this property as concerning 'substance' in both senses. First, insofar as it supposits for *per se* subsisting substances, we can restrict the term 'substance' to supposit only for material, i.e., generable and corruptible substances, namely, those that are under the heavens. But if someone were to object that a surface, which is not a substance, successively receives contraries, such as whiteness and blackness, we would reply that accidents do not receive each other, except on account of substance, which receives them of itself, so that whiteness is not in a magnitude as in its subject, but it is in the substance, which is itself subjected to magnitude.

But this property can be expounded also insofar as the name 'substance' is taken to supposit for terms from the category of substance and 'most' is not construed with 'proper'. For this is not strictly a property [*proprium*][24] of substantial terms, since it does not apply to them all. But what is most proper, i.e., applicable, to substance, i.e., primary substance, is that it is susceptible of contrary predicates by denominative predication, as when, for example, of the term 'Socrates' first [the term] 'white' is predicated, and then 'black', or [first] 'warm' and [then] 'cold', because of its own change, i.e., on the basis of the subjective change of that for which it supposits.

But should someone object that in this way contraries are predicated even of accidental terms, as for example, this white thing is now warm and later cold, then we reply that such an accidental term is not principally subjected, as was said earlier. This is why it was stated in bk. 5 of the *Metaphysics*[25] that if someone educated [*musicum*] is said to be white, then this is because both, namely, 'educated' and 'white', are said of another, namely substantial, subject, as of 'Socrates' or 'Coriscus', for example.

But then it is further queried why Aristotle said this to be an [exclusive] property of primary substance, when it also applies to secondary substance; for we do say that it is an animal that is sometimes healthy and sometimes ill. The reply is that he made this assertion to indicate that such changes of accidents are more primarily attributed to primary substances than to secondary substances. For if we say that a man is ill or that he is walking, then this does

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ing *maxime substantie* to indicate the genitive case of both terms), but his subsequent point is clear anyway. Taking 'substance' to stand for things signified by substantial terms, and not for the terms themselves, the alleged property will not apply to God and the heavens, whether we take Aristotle as speaking about things that are the 'most', i.e., maximally substances, or as stating that this property applies to these as well as other substances the most.

24. See 2.7.3 n. 43.

25. Aristotle, *Metaphysics* V.7.1017a7–10.

not apply to him *qua* man, but insofar as he is Socrates, who is ill or walking; and this is why it is asserted in the preface of the *Metaphysics*[26] that actions and generation pertain to singulars.

3.3 Chapter 3: On quantity

3.3.1 The division of quantity into continuous and discrete

(1) One quantity is continuous, another is discrete.[27] (2) Continuous quantity is that the parts of which are joined in a common boundary; (3) discrete quantity is that the parts of which are not joined in a common boundary.

The third chapter is about quantity, or the category of quantity. It contains seven parts: the first is the division of quantity into continuous and discrete; the second is about the species of discrete quantity; the third is about the species of continuous quantity; the fourth is about the division of quantity into quantity *per se* and *per accidens;* and the remaining three parts [assign] three properties to quantity.

The first part has three sections. The first is the division of the genus 'quantity' by means of its primary differences, namely, [by stating] that one quantity is continuous, another discrete. These are, therefore, the first species of quantity, namely, continuous quantity and discrete quantity. But these first species are not the most specific species, whence they are not only called species, but also subaltern genera. And this is what was indicated when it was said that one quantity is continuous, another discrete, i.e., the one genus and the other.

The second section describes continuous quantity as one whose parts are joined in a common boundary, as parts of a line in a point, the parts of a surface in a line, the parts of a body in a surface, and the parts of time in a moment. But as to whether a point is a thing distinct from a line, and whether a

26. Ibid., I.1.981a17–18.

27. For an excuse for the somewhat awkward formulation see Buridan's comment below.

moment is a thing distinct from time, and whether they are indivisible things, or what each one of them is, bk. 6 of the *Physics* should be consulted.[28]

The third section describes discrete quantity as one whose parts are not joined in a common boundary. But this description is doubtful, because two halves of a line are two, whence they are a number and a discrete quantity,[29] although those two halves are joined in a common boundary, for they are parts of a continuous line. We reply that Aristotle's intention is that for a quantity to be continuous it is required that its parts be joined in a common boundary, although for it to be discrete this is not required; rather, it is enough that there should be some distinction, namely, the otherness [*alietas*] of things one from the other, and that those [things] should be natural things. For those two halves, if they were separate, would be just as properly or even more properly said to be two than when they are continuous with each other. Therefore, we should say that those two species of quantity are not so distinguished from each other that they could not supposit for the same things. For the same things, namely, the parts of a continuous magnitude, are a magnitude, which is numerically one, but it is on the basis of different concepts [*rationes*] that they are called continuous and discrete quantity. For they are called continuous quantity insofar as the parts [of that magnitude] are joined in a common boundary, but they are called discrete quantity insofar as the parts [of that magnitude] are different from each other. But these concepts are not opposed to each other, and so they can supposit for the same things, while at the same time such a diversity of things suffices for the terms imposed according to those concepts to be diverse species.

28. Aristotle, *Physics* VI.1.231a21–242, 231a29–b7.

29. Since for Buridan numerical terms refer to concrete groups of things, a group consisting of a number of things *is* a number. For example, the term 'two' is truly predicable of any pair of things, such as Plato and Socrates, or Plato's horse and Socrates' horse (provided they do not have the same horse), or even Plato's left side and right side, etc.; likewise, the term 'three' is truly predicable of any three things taken together, as for example of Plato, Socrates, and Socrates' horse, etc. But then, since of anything of which a numerical term is predicable the term 'number' is also predicable, the above-listed groups are also numbers, i.e., Plato and Socrates are two, whence they are a number, etc. So the point of Buridan's objection is that since the two halves of a line are two, they are a number, and hence a discrete quantity; still, since they are joined, they seem to constitute a continuous quantity, whereas it would seem that nothing can be both a discrete and a continuous quantity.

3.3.2 *The species of discrete quantity*

Discrete quantity has two species: the first is number, and the second is expression [*oratio*].

We should note, as the Commentator says in [his commentary on] bk. 5 of the *Metaphysics,*[30] that in the *Categories* Aristotle spoke about many things in accordance with the received ancient views of his time, rather than in accordance with the determination of truth, relegating any demonstrative determination to the speculative sciences. This is the manner in which he spoke about 'expression' here, for the term 'expression' does not pertain to the category of quantity any more than does the term 'stone', or the term 'action', or 'motion', or even the terms 'men', 'people', 'army'. For if an expression is said to be quantified because it is measurable by time, then so are action and motion, or in this way even a stone is quantified and is measurable with respect to its own magnitude, and even men and people are quantified in respect of their multitude and are measurable by numbers.

So we have to note that terms are properly in the category of quantity only if they themselves or their species are predicable denominatively of their subjects, either by themselves or by their concrete counterparts in [reply to a question asking about] quantity [*in quantum*]. It is in this sense that 'number' is truly in the category of quantity, for its species are the terms 'dyad' [*binarius*], 'triad' [*ternarius*], etc., the concrete counterparts of which are 'two' [*duo*], 'three' [*tria*], etc., and it is these that are predicated in [reply to a question asking about] quantity [*quantum,* i.e., 'How much?'], by extending 'quantity' [*quantum*] to cover even multitude [*quot,* i.e., 'How many?'] as well. For if someone asks: 'How many are these men?', or 'How much [i.e., how big] is their multitude?', we shall reply that they are three or four. But the term 'expression' neither by itself, nor in respect of its species, nor in terms of its concrete forms, is predicated in [reply to a question asking about] quantity [*quantum*]. Therefore, if we ask, pointing at anything: 'How much is this?', or even, pointing at many things, 'How much are these?', or 'How many are they?', it would not be appropriate to answer that they are an expression, or expressing, or expressed, or affirmation or negation, or affirmed or negated. Whence Aristotle, in bk. 5 of the *Metaphysics,*[31] did not enumerate 'expression' among the species of quantity.

So it seems to me that we should conclude as a corollary that 'discrete quan-

30. *Aristotelis Metaphysicorum libri XIIII cum Averrois Cordubensis variis in eosdem commentariis,* in Averroes, *Aristotelis Opera cum Averrois Commentariis* (Venice, 1562–74; reprint, Frankfurt am Main: Minerva, 1962), f. 125vb K.

31. Aristotle, *Metaphysics* V.13.1020a17–18.

tity' is not a genus of 'number'. Rather, they are equivalent, for every number is a discrete quantity and conversely. But 'number' is one of the first species of 'quantity', distinguished from 'continuous quantity', and its species are 'dyad', 'triad', and so on.

3.3.3 The species of continuous quantity

The species of continuous quantity posited by Aristotle are 'line', 'surface', 'body', 'time' and 'place'.

In connection with the third part we should note first that if points are not indivisible things distinct from lines, then every point is a line; and similarly every line is a surface, and every surface is a body, as should be obvious from bk. 6 of the *Physics*.[32] Therefore, these three species are not so distinguished from each other that they could not properly supposit for the same things, but rather are such that they signify magnitudes by means of diverse concepts of measuring and supposit for them. For a magnitude is called a line as it is understood to be measurable by one dimension, not considering its measurability by other dimensions; whence an ell[33] [*ulna*] is called a line, but it is not called a surface, or a body, under the concept according to which it is said to be an ell, for in [the process of] thus measuring, only its length is considered, disregarding whether it is thick or thin. But, in the next place, a magnitude is understood as measurable by two dimensions drawn across each other, without considering its measurement in the third dimension, as we measure the area [*arpentum*] of land; and as such it is called a 'surface'. Finally, a magnitude is understood as measurable by three dimensions drawn across each other, and by this measuring we know its whole capacity all around, and as such it is called a 'body', and this is how the quantity of wine in a barrel is measured.

We should note, second, that Aristotle, speaking here in accordance with the customary way of speaking of his time and not in accordance with the determination of truth, enumerated among the species of 'continuous quantity' the term 'place', which is not in the category of quantity, for it is not predicated in [response to a question about] quantity, either by itself, or by its species, or by the concrete counterparts of its species. For if someone asks: 'How much

32. Aristotle, *Physics* VI.1.231a21–242, 231 a29–b7.

33. An ell is a measure of length (originally, the length from the elbow to the middle finger's tip, used to measure the length of fabrics). Obviously, the exact length the term *ulna* actually denoted may have varied considerably in various places and over time.

[i.e., how big] is Socrates?', it would be absurd to respond that he is a place, or placing or placed, or in the house, or within the surface of the air,[34] etc.; but in personal supposition it is correctly true that a place is of some quantity, or that it is a quantity, indeed, even a man or a donkey is of some quantity, or even is some quantity.

Third we should note also, concerning 'time', that the name 'time' can be taken so that its concrete counterpart would be 'sometime', or 'in [or at] some time', whose species would be 'today', 'tomorrow', 'formerly', 'someday', 'in the year of our Lord 1300' etc.; it is in this way that 'time' pertains to the category of time [*quando,* lit.: when]. In another sense it can be taken so that its concrete counterpart would be 'for some time' [*aliquantum diu*], the species of which would be 'for one day', 'for two days', 'for a year' or 'for two', or 'for one hour' or 'for two hours'; and then it pertains to the category of quantity, and this is properly so, for this is a reply to a question about quantity [*quantum*]; for example, [to the question]: 'How long [*quantum*] did Socrates live?' we would reply 'sixty years' or 'for sixty years'; and [to the question]: 'How big [*quantum*] is this motion with respect to its duration?' we would reply 'one hour' or 'two hours'. And these responses about duration are just like 'two cubits long' or 'three cubits long' when used [in talking] about extension. And, in a similar manner, I would also take the following terms to belong to the species of 'continuous quantity': 'arpent' [*arpentum*], 'semiarpent' [*semiarpentum*], 'pound' [*libra*], 'ounce' [*uncia*], 'quart' [*quarta*], 'sopina' [*sopina*], and the like.[35]

3.3.4 The division of quantity into quantity by itself and quantity by coincidence

Some quantities are said to be quantities by themselves [*secundum se*], others are said to be quantities by coincidence [*secundum accidens*], as when [something white] is called many, because [it has] many surfaces, and an action [is called] long, because [its] time is long.

34. This seemingly odd alternative alludes to the Aristotelian definition of place, according to which it is the surface of the containing body, whence Socrates' place is the inner surface of the air surrounding him.

35. 'Arpent' *(arpentum)* and 'semiarpent' *(semiarpentum)* were measurements of area (originally the area a man could plow [*arare*] in a day), whereas 'sopina' (sopina) was some measurement of volume.

The fourth part I added to briefly clarify Aristotle's meaning on this point, both as it occurs in the *Categories* and in bk. 5 of the *Metaphysics.*[36] So I assert that Aristotle here calls 'quantity by itself' [*quantitas secundum se*] terms that are properly in the category of quantity, and he calls 'quantity by coincidence' [*quantitas secundum accidens*] those of which the former terms are predicated. And I would speak in an analogous manner about the other categories too; therefore, in a similar manner, the term 'man' is said to belong by coincidence [*per accidens*] to some [other] category, namely, to quantity, or quality, or relation, for we say that a man is white, or three cubits tall [*tricubitum*], or is a father or a son. So the categories, or the species of categories, are mingled with each other, for they are truly predicated of each other, although denominatively.

It is true, nevertheless, that Aristotle in bk. 5 of the *Metaphysics*[37] distinguishes two modes of quantified things or of quantities by themselves [*quantitates secundum se*], namely, [by stating] that some of them are quantities by substance and others are their *per se* attributes [*per se passiones*]. Now by 'quantities by substance' he means terms that are properly in the category of quantity, because they are predicated essentially of one another, namely, as a superior [term] is predicated of an inferior. But he calls attributes predicable of these, such as 'double', 'half', 'straight', 'curved', etc., 'quantities by themselves' but not 'by substance', for they are predicated of the terms that are properly in the category of quantity *per se* and in the second mode, i.e., in the second mode of predicating *per se,*[38] namely, denominatively, and not essentially. Therefore attributes of this kind sometimes are called 'quantities by themselves' [*quantitates secundum se*], for the reason just stated, and sometimes there are called 'quantities by coincidence' [*quantitates per accidens*], for they are not properly in the category of quantity, and neither are they predicated essentially of the terms that are properly in the category of quantity.

36. Aristotle, *Categories* 6.5 b1; *Metaphysics* V.13.1020a17–18.

37. Aristotle, *Metaphysics* V.13.1020a17–18.

38. See Aristotle, *Posterior Analytics* I.4.73a34–73b15, the passage containing the distinctions of what the Scholastics referred to as *quattuor modi dicendi per se,* the four modes of *per se* predication. The second mode, referred to here, obtains when an attribute [*passio*] is predicated of its proper subject, say, 'snub' of 'nose', or 'isosceles' of 'triangle'. The predication in such cases is denominative and contingent: if something is a triangle it does not have to be an isosceles, whence 'this triangle is an isosceles' may be true but may be false also. The predication is still *per se,* however, in that there is a strict conceptual connection between the subject and the predicate, for the subject is a part of the definition of the predicate, so this predicate can apply only to this subject: an isosceles has to be a triangle.

3.3.5 First property: quantity has no contrary

> There are three properties [*proprietates*] usually assigned to quantity. The first is that quantity has no contrary, but this is not exclusively a property of quantity, for it applies to other things too, namely, to substances, as was said in the chapter on substance.

This property should be understood as applying to terms in the category of quantity and not to the things for which they supposit. In this way this property is not in conflict with the position of those who state that whiteness and blackness are quantities and magnitudes, although they are contraries. It is clear, therefore, that the terms 'two', 'three', 'four', or 'dyad', 'triad', etc., are not contraries, for the same thing is a dyad and a triad, namely, its two halves and its three thirds. Neither are the terms 'magnitude' and 'number' contraries, for every magnitude is a number, nor are the terms 'line', 'surface', and 'body', for every line is a surface and every surface is a body, as should be evident from bk. 6 of the *Physics*.[39]

But there are some doubts raised by Aristotle.[40] The first is that there are contraries of place, such as 'up' and 'down'. But we have already said that the term 'place' is not properly in the category of quantity, so the objection is invalid.

The second objection[41] is that 'big' and 'small' are contraries, and similarly, 'many' and 'few', although they are in the category of quantity. But Aristotle replies in two ways: First, that the terms 'big' and 'small' are not in the category of quantity but in the category of relation, insofar as they are opposed to each other, and this is clear from bk. 10 of the *Metaphysics*.[42] Second he responds that those terms are not contraries, for the same thing is correctly said to be big and small in different respects, whence they are not opposed without qualification and absolutely, but relatively, for it is not possible for the same thing at the same time to be big and small with respect to the same thing. And the same goes for 'many' and 'few'.

But there is a third doubt. For the terms 'two cubits long' and 'three cubits long' are properly in the category of quantity, and they are contraries, since they can be successively verified of the same and for the same, but not simultaneously; for what is two cubits long, if it gets thinner, will be three cubits long. I reply that if we were to take contrariety in this broad sense, insofar as the aforementioned conditions would suffice for contrariety, we would con-

39. Aristotle, *Physics* VI.1.231a29-b7.

40. Aristotle, *Categories* 6.6a12–8.

41. Ibid., 6.6a24–5.

42. Aristotle, *Metaphysics* X.5.1055b30.

cede contrariety in quantity, even as Aristotle concedes this in bk. 5 of the *Physics*,[43] for there is change in respect of quantity, and this has to take place from contrary to contrary. But if we add that for contrariety properly speaking, in addition to these conditions maximal distance is also required, as is clear from bk. 10 of the *Metaphysics*,[44] then there is no contrariety in quantity; this is because there is no maximal or minimal quantity in the way there is in quality something naturally the whitest and something naturally the blackest.

3.3.6 Second property: no quantity is susceptible of more or less

The second property assigned to quantity is that no quantity is susceptible of more or less. But this is not properly a property of quantity, for it applies to other things as well, namely to substances, as was indicated above.

This property is easily expounded, in the same way as we expounded it in connection with substance, namely, that terms in the category of quantity are not predicated with the addition of the adverbs 'more' or 'less'. For we cannot say that this [thing] is more three-cubits-long than that one, neither do we say that this body is more a body than another, nor that one surface is more a surface than another, although one body may be less than another and a surface may be bigger than another.

3.3.7 Third property: it is with respect to quantity that things are said to be equal or unequal

The third property, which is properly proper to quantity, is that it is with respect to quantity that things are said to be equal or unequal.

This property is clear by induction. For every body is equal or unequal to any body, and every line to any line, and every number to any number, and

43. Aristotle, *Physics* V.2.226b2–3.

44. Aristotle, *Metaphysics* X.4.1055b6.

every time to any time, and so on for the rest. And a white thing is not said to be equal to another white thing with respect to whiteness, but [in that respect it is said to be] similar; indeed, if a white thing is said to be equal to another white thing, or a man to another man, then this is on account of the bodies or surfaces, over which the whitenesses are equally spread out [*quibus albedines coextensae sunt*]. Also, if two motions are said to be equal, then this is only in respect of the magnitudes of the moving things, or with respect to the magnitudes of the distances covered [*magnitudines spatiorum*], or with respect to their duration.

3.4 Chapter 4: On relation [*ad aliquid*]

3.4.1 The definitions of relatives

(1) Those are said to be [*with respect*] *to something* [*ad aliquid*] that, in what they themselves are, are said to be *of something* else, or in any other way, belong *to something* else; (2) or thus: [*with respect*] *to something* are those for which to be what they are is to be related somehow *to something*. (3) The first of these descriptions correctly applies to all terms in the category of *to something* but is not proper to them, but the second is proper to them. (4) From this it is concluded that whoever knows definitively [i.e., by its definition] one of the relatives knows also the other.

The fourth chapter is about the category of [with respect] *to something*.[45] It is divided into six parts: the first is about the definitions of relatives, the second is about their species, and the other four are about their properties.

Concerning this whole chapter we should note first that in any ordering of predicables in a category we should posit a most general genus, which is a term that is the most common and is predicable of all the others in that hierarchy as the superior of its inferiors. But then it is queried which this term is in this hierarchy of predicables: is it the term 'relation' or is it the term '[with respect] to something'?

45. In the chapter title I have retained the customary translation of this phrase. As we shall see, however, in the text Buridan explicitly contrasts the terms *ad aliquid* and *relatio,* so in the translation I will also have to resort to a more literal rendering of the former, using the precise, albeit awkward, construction "[with respect] to something."

To this I reply that the term 'relation' is not that most general genus, but rather it is the term '[with respect] to something'. For a genus taken significatively should be universally predicable of all its species, also taken significatively, as for example every man is an animal, and every line is a quantity, and every cutting is acting, and so on for the rest. But the term 'relation' is not predicated in this manner of the terms of this category for it is not true that every father is a relation, for then a man and a horse would be relations, since they are fathers. Again, everything that is identical with something or different from something would be a relation, and then every being is a relation. But the term '[with respect] to something' is predicated of all terms in this category in this way. For every father is a father [with respect] to something, and every double is a double [with respect] to something, and everything that is identical or different is identical [with respect] to something, or is different [with respect] to something, and so on for the rest; whence even a man, if he is a father or a master, is a father or master [with respect] to something.

Therefore we should note that the proper mode of predication from which this category is derived is the predication [of a term] of primary substances or of other subjects with the addition of 'to something'. For example, this is a father [with respect] to something, or a master [with respect] to something, or similar to something, etc. But terms of the other categories are not so predicated. For we do not say that this is a man or a donkey [with respect] to something, or that this is two cubits long, or white, or sitting, or clad, etc., [with respect] to something.

Next we should see what we should understand by 'relation', 'relative', and 'absolute'. And I say that just as motion is the act by which the mover moves and the thing moved is moved, and sight is the act by which the seer sees and the visible thing is seen, in the same way, properly speaking, 'relation' is the act by which the relating thing relates and the thing related is related. But the relating and comparing thing is our soul, which thinks of one thing in comparison to another. For the soul can think of things by two kinds of concepts. In one way, [it thinks of things] without comparing things to one another, and it is by the mediation of such concepts that the soul imposes the terms 'man', 'white', 'two cubits long', [etc.,] to signify; such concepts therefore are to be called 'absolute', properly and primarily, and consequently also the spoken terms subordinated to these concepts are called 'absolute terms'.

In another way the soul thinks of things in relation to one another, comparing one to another, and such concepts are properly called 'relatives' and 'relations', for it is by these that the soul relates and compares things to one another. It is by the mediation of these concepts that those spoken terms are imposed to signify, which, accordingly, we call 'relative', or 'respective terms', for example, 'father', 'son', 'double', 'half', etc. Hence it is obvious that 'abso-

lute' and 'relative' or 'respective' are not differences of the things signified outside, but they are primarily differences of concepts, and secondarily of significative utterances that are imposed [to signify] by the mediation of those concepts. Hence, the name 'relation' is correctly predicated of the terms of this category taken materially, but not if they are taken personally or significatively; therefore, it is not a genus of these terms.

These points having been made, it is clear that in the first part there are four sections, namely, two descriptions of '[with respect] to something', the comparison of these, and a corollary. And the whole [issue] is quite difficult, as Aristotle remarks in the *Categories* at the end of this chapter, when he says: "perhaps it is difficult to state anything about these things with confidence, unless they are thoroughly discussed several times; but it is not useless to query the individual issues."[46] Therefore I also intend to speak about this category only tentatively; and if what I say seems to be rightly said, then let it be admitted, if wrongly, then let it be rejected.

Now we should see the difference between those two descriptions, of which Aristotle says that they differ a great deal, and those first three sections should be manifest from this. First, it seems to me to be worthy of note that, just as we observed about quantity that some are quantities by themselves [*per se*] and some are quantities by coincidence [*per accidens*], so also we should here speak analogously about '[with respect] to something'. For some [things] are said to be '[with respect] to something' by themselves, since they are terms that are properly in the category of '[with respect] to something', as are 'double', 'half', etc. Others are in the category of '[with respect] to something' by coincidence [*per accidens*], for they are subject terms of which terms properly in the category of '[with respect] to something' are truly predicated. And this applies absolutely and universally to all terms, or at least those suppositing for some thing or for some things; for the terms 'same or different', 'cause or caused', 'prior or posterior' are truly predicated of all terms, and if one is a father, then another is a child, and if one is a master, then another is a slave, etc. So Aristotle wanted to claim that the first description applies to all terms that are said to be '[with respect] to something', whether by themselves or by coincidence [*per accidens*]; whence that description applies not exclusively to the terms that are properly in this category, for the very thing that is a man is someone's father or someone's son, someone's master or someone's slave, and the very thing that is white is similar to something or dissimilar to something.

But the second description applies only to terms that are properly in this category. And then, so that this will be more apparent, we have to expound this definition in the following manner: by '[to be] what it is' we understand

46. Aristotle, *Categories* 7.8b24.

essential, nondenominative predication, so that every term properly in this category is predicated essentially of itself with the addition of '[with respect] to something'; thus a father is a father [with respect] to something, and a son is a son [with respect] to something, and the identical is identical with [respect to] something, and something prior is prior [with respect] to something, and something posterior is posterior [with respect] to something. Now, that these predications are essential is obvious, for a relative concept is not only a concept of something but also a concept of something [with respect] to something; therefore a relative term, by virtue of its proper signification and imposition, connotes something [with respect] to something, whence the addition '[with respect] to something', construed with a relative term, amounts only to the explication of the connotation of that term, but it does not add some connotation extrinsic to that term, and so the predication is essential. But this is not the case with other terms. For an ox is not said to be an ox '[with respect] to something', and if it is said to be somebody's ox, this signifies that it is someone's possession; and this is not essential predication, for it would still be an ox even if it were not anyone's possession. Again, if a hand or a head is said to be someone's hand or head, this signifies that it is someone's part, and this is denominative and not essential predication, for it would still be a hand, even if it were not someone's part, namely, if it were cut off and God preserved it alive; still, it is not possible by any power that a part be a part without being the part of some whole, for the reason that the name 'part' is properly in the category of '[with respect] to something'.

And if someone were to object that by the same token there would be no motion unless it were the motion of something, neither would there be whiteness, unless it were the whiteness of something, nor would there be a white thing, unless it were white by whiteness, I would reply that this [consideration] applies to abstract names and their concrete counterparts as a consequence of their interrelations, be they substances or others. So even a man would be said to be a man *by* humanity, and an existent would be said to be an existent *by* existence, and existence would be said to be the existence *of* an existent; therefore this relationship [between concrete and abstract terms in general] does not determine the allocation of a term to some category or other.

But then again, there arises a serious doubt concerning the fourth section. For some people expound it as saying that it is necessary to define each of the correlatives by the other. But this does not seem to me to be true. For if I do not know the meaning [*quid nominis*] of both the term 'father' and the term 'son', and I ask you to tell me what is a father or what I should understand by the term 'father', and you tell me that a father is he who begot a son, I immediately reply: "I do not know what you mean by 'son'." And if then you said that by

'son' I should understand the one whom the father begot, you would teach me nothing, for I would not know what I should understand by 'father'. Whence it is clear that if you defined the terms 'hemiolium' and 'subhemiolium' by each other, saying that hemiolum is [the inverse] proportion of subhemiolium, you would not teach anyone what hemiolium is. But we should understand this [fourth section] in the sense that one of the correlatives is defined by the other, because it is defined by the substrate [*substratum*] of the other; thus, the hemiolium is the ratio of three to two, and the subhemiolium is the ratio of two to three, and a father is an animal that by its semen begot another animal and a son is an animal begotten by the semen of another animal, and so on for the rest. For in the definition of a relative term it is necessary to make explicit its substrate and the substrate of its correlative as well as the relationship according to which the relative name is imposed to signify.

But then what did Aristotle mean by saying that "he who definitively knows one [of the correlatives] knows also the other"?[47] I reply that this proposition [as it is formulated] in these words is not necessarily true in its proper sense. Rather, it is put forward in the sense that who knows one of the correlatives definitively, easily recognizes the other one definitively, for the relationship has only to be reversed. For example, assuming that 'double' and 'half' are correlatives, then, if one knows that 'double' is the ratio of two to one, he can immediately know that 'half' is the ratio of one to two; again, assuming that 'father' and 'son' are correlatives, knowing that a father is an animal that by its semen begot another animal, one easily knows and infers that a son is an animal begotten by the semen of another, and so forth. And perhaps it is in order to indicate this [point] that Aristotle spoke using the following words: 'if someone knows definitively something that is said [with respect] to something, he will also have definitive knowledge of that [with respect] to which it is said',[48] i.e., he will easily know it.

3.4.2 The species of relatives

Usually three species of relations [*relativa*] are distinguished: relations of parity [*relativa aequiparantiae*], relations of superposition [*relativa superpositionis*] and relations of subordination [*relativa suppositionis*]. Relations of parity are predicated with respect to the same concept, and so they

47. Ibid., 8.8a30.
48. Ibid., 8.8a37.

> have the same name. For example, what is similar is similar to something similar, a friend is a friend of a friend, a neighbor is a neighbor of a neighbor, a contrary is contrary to a contrary, etc. Relations of superposition are predicated on account of some superiority [of the one with respect to the other], as the father with respect to the son, the master with respect to the slave, the double with respect to the half, the prior with respect to the posterior, the superior with respect to the inferior, etc. Relations of subordination are predicated correlatively to relations of superposition, as the son with respect to the father, the slave with respect to the master, etc.

This second part is clear even without comments, unless one objected that Aristotle distinguished the modes of relations differently in bk. 5 of the *Metaphysics*.[49] But we should reply that in that fifth book Aristotle discusses substance, quality, quantity, and relation [*ad aliquid*] not insofar as they are distinct categories; rather, he there distinguishes between the several equivocal senses of these names. Whence in the category of quality he posits substantial differences that are not in the category of quality, and in the same manner, he does not distinguish there terms that properly belong to the category of relation, but he even posited there terms that do not properly belong in the category of relation [*ad aliquid*] at all, as with the terms 'agent', 'patient', 'active' and 'passive'.

3.4.3 First property: relations have contraries

> There are four properties [*proprietates*] assigned to relations. The first is that relations have contraries; thus virtue is the contrary of vice, and these are relations.

I believe that this is not a property [*proprietas*] of relations that are properly in the category of relation [*ad aliquid*]. If it applies to some, it applies neither to all nor to only [these terms], for only that is said to be a property [*proprium*] which applies either to all but not to them alone, or to them alone, though not to all, or to all and to them alone, as Porphyry claims.[50]

49. Aristotle, *Metaphysics* V.15, esp. 1021b1–12.

50. Porphyry, *Isagoge, translatio Boethii,* ed. L. Minio-Paluello (Bruges: Desclée, De Brouwer, 1966), p. 19, l. 1–p. 20, l. 4. For the terminology of *proprietas* vs. *proprium* see 2.7.3 n. 43.

Again, I also believe that no terms in the category of relation [*ad aliquid*] are properly and absolutely contrary. For what is said here about virtue and vice is irrelevant, since these terms are not properly in the category of relation but in the category of quality. And if someone said that the terms 'big' and 'little' or 'similar' and 'dissimilar' are contrary, this is not true in an absolute sense, for the same thing is said to be big and little at the same time, although with respect to different things. It is true, nevertheless, that the same thing is not said to be big and little, nor equal and unequal at the same time with respect to the same thing. But this is not absolute opposition but relative opposition.

Therefore finally I say that when Aristotle posited this condition or property of relative terms, he was speaking in accordance with the received opinion and extending the term 'relation' [*ad aliquid*] to those that can be predicated relatively [*ad aliquid*] by coincidence [*per accidens*], although properly speaking they belong to other categories; alternatively, he took 'contrariety' for 'relative opposition'.

3.4.4 Second property: relatives admit of more or less

The second property assigned is that relatives admit of more or less, so that one thing is said to be sometimes more similar and sometimes less similar to another thing; but this does not apply to all relatives, for we do not say that something is more or less double or triple.

This condition of relatives is interpreted as concerning relative terms that are predicated of their subjects with the addition of the adverbs 'more' and 'less'. And it is obvious that this does not deserve to be called a property [*proprietas*] of terms in the category of relation, for it neither applies to them all, nor only to them; rather, it is a feature truly attributed merely to some relative terms.

3.4.5 Third property: all relatives are predicated conversely with their correlatives

(1) The third property assigned is that all relatives are predicated conversely with their correlatives. For example, the slave is the master's slave, and the master is the slave's master, and the bigger is bigger than

the less, and the less is less than the bigger. (2) But the conversion is not always in the same case. For example, a sense is a sense *of* what is sensed, but what is sensed is sensed *by* a sense.[51]

The fifth part has two sections. The first assigns the third property, the second distinguishes several modes of conversion.

As to the first, we should note that Aristotle does not intend to speak here about conversion or convertibility in the sense of mutual universal predication of terms of each other, in which sense we say that the *definiens* is convertible with the *definitum,* and that a proper attribute is convertible with its subject, for neither is every father a son, nor is every double a half. But by 'conversion' we understand that both are predicable of their subject with the addition of the other in an oblique case, for just as the slave is the master's slave, so is the master the slave's master.

But then it is objected that although 'father' and 'son' are predicated correlatively, not every father is a son's father, but may be a daughter's, nor is every son a father's son, but perhaps a mother's. I respond that it is not necessary that they are thus converted by universal predication, but it is sufficient by particular predication, so that those predications mutually entail each other of necessity. For it necessarily follows that if someone is a father of a son, then someone is a son of a father, and conversely; also, in the same manner, if someone is a father of a daughter, then someone is a daughter of a father, and so forth.

Again, one could maintain their convertibility in terms of universal predications, although in this case there would have to be a disjunction with respect to gender, namely, male and female gender, and propositions would have to be constructed with the disjunctions between those genders, so that every father or mother is a son's or a daughter's father or mother, and, conversely, every son or daughter is a son or daughter of a father or a mother; and similarly with 'master' [*dominus*] and 'mistress' [*domina*] with respect to 'servant' [*servus*] and 'servant-girl' [*serva*], etc.

As to the second section, it seems to me that terms which are properly in the category of relation [*ad aliquid*] are always converted one for the other in the same case. The case of 'knowledge' and 'knowable' does not provide a counterinstance, for 'knowledge' is not properly in the category of relation but in the category of quality; again, neither does the case of 'discipline' and 'disciplined', for they are not properly correlatives; correct examples are the terms 'teacher' and 'disciple', which both are converted in the genitive case.[52]

51. The Latin is *sensus sensati sensus, sensatum sensu sensatum.*

52. For every teacher is a disciple's (genitive) teacher and every disciple is a teacher's (genitive) disciple.

Further, no counterinstance is provided by the case of 'action' and 'passion', nor is it by the case of 'heater' and 'heatable', and their likes, for I take it that they are not properly in the category of relation [*ad aliquid*]. But actions and passions and such things should rather be discussed in [connection with] the book[s of] *Physics*.[53]

3.4.6 Fourth property: relatives are naturally simultaneous

(1) The fourth property is that relatives are naturally simultaneous. (2) But Aristotle says[54] that this does not apply to all relatives; for knowledge and the knowable and a sense and the sensible are not simultaneous by nature, but rather the knowable is prior to knowledge, and the sensible is prior to the sense.

The sixth part has two sections. The first assigns the fourth property of relative terms and is quite doubtful. For the following terms are relations [*ad aliquid*]: 'prior', 'posterior', 'cause', 'caused', 'father', 'son'; but what is prior and what is posterior are not naturally simultaneous, neither are the cause and what is caused, for the cause is naturally prior, nor are father and son, for the father is naturally prior, nor are all the things that are diverse from or equal to each other naturally simultaneous, for then all things would by nature simultaneously exist.

So I draw some conclusions concerning this point. The first is that it is not necessary for all relatives to be naturally simultaneous in the way that those things for which they supposit should be naturally simultaneous. Therefore the predicate 'are naturally simultaneous' is not verified of all correlatives taken significatively, for it does not have to be true that the cause and what is caused, or what is prior and what is posterior, are naturally simultaneous, as was objected above.

The second conclusion is that it is not necessary for relative terms to be naturally simultaneous in such a manner that it is impossible for the one to be without the other. For the spoken term 'father' can be without the term 'son'. Similarly, in the mind, I believe that I can have the concept [*intentio*] of the term 'double' without the concept of the term 'half'. For if I do not know

53. Aristotle, *Physics* VII.3.246a19.

54. Aristotle, *Categories* 7.7b15.

the significations of the terms 'double' and 'half' and I ask you to tell me what they are, you will say that a double of something is what contains precisely twice as much as that thing. If, therefore, you[55] understand this correctly, it is not necessary that you form at once and equally promptly the proper concept of a half; indeed, it is rather necessary that you should first convert the proportion and be aware of the following, namely, that as there is a relationship of two to one, so there is a converse relationship of one to two, in accordance with which something is said to be a half.

The third conclusion is that they are not naturally simultaneous in such a way that they would be mutually defined, for this [alternative] was eliminated above. And these conclusions were posited to eliminate certain opinions that I do not believe to be true.

The fourth conclusion to be drawn seems to me to be that all correlative terms are naturally simultaneous in the sense that it is necessary that if one of them is verified by the mediation of the verb 'is' of the transcendental name 'something'[56], then also the other is verified of it, or, at least in the plural, it is verified of the subject 'some things' with the mediation of the verb 'are'. For example, if something is a father, then something is a son and conversely, and if something is greater, then something is less, and conversely. Indeed, if something is prior, then something is posterior, although it is not true that if what is prior is, then what is posterior is. Therefore I think that the proposition 'Aristotle is prior to the Antichrist and the Antichrist is posterior to Aristotle' should be conceded. For when speaking about prior and posterior in time, the terms 'prior' and 'posterior' signify future with respect to the past and past with respect to the future; therefore, if they become predicates they can ampliate their subjects to supposit for past and future things.[57]

But as to the second section, which asserts that this property does not apply to all relative terms, for it does not apply to 'knowledge' and 'knowable' and to 'sense' and 'sensible' [i.e., 'susceptible of being sensed'], we may say that these terms are not properly in the category of relation [*ad aliquid*] so we should not bother about them here. For it is true that it does not follow that if there is a knowable, then there is knowledge, or that if there is a sensible, then there is a sense. Indeed, even if 'knowable' and 'sensible' were properly

55. The change of persons is somewhat strange, but this is what we have in the text.

56. A 'transcendental name' is a name that applies to any being as such, and thereby it transcends, i.e., goes beyond the limits of the categories. Such are, e.g., the names 'being', 'one', 'thing', and 'something', which truly apply to things in the category of substance as well as to things in the other categories. For example, just as Socrates is a being, is one being, is a thing, and is something, if he exists, so is his wisdom, if he is wise, or his whiteness, if he is white, etc.

57. See 4.4.6.

in the category of relation, the terms 'knowledge' and 'knowable' and 'sense' and 'sensible' would not be correlatives but rather the terms 'cognitive' and 'knowable' and 'sensitive' and 'sensible'. Thus it would then be absolutely correctly conceded that if something is sensible, then something is sensitive and conversely, and that if something is knowable, then something is cognitive, and conversely, for all these terms are names of potencies, which ampliate to supposit for [things] that can be, although at present they are not. And in this way it is obvious that this property applies to all relative terms, though it is not exclusively proper to them, for it applies also to others, since it is in this way that the *definiens* and the *definitum* are naturally simultaneous in general.

Still, it should be noted that it is not universally necessary that if correlatives are posited as subjects of propositions with the verb 'is' as their predicate [*secundo adiacens*], then these propositions should mutually entail each other. For the present is prior to the future, and the future is posterior, but with these terms it does not follow that if the prior is then the posterior is, for the present is and the future is not, although it will be.

3.5 Chapter 5: On quality

3.5.1 The description of quality

> Quality is that on account of which we are said to be such-and-such [*quales*], as on account of whiteness [we are said to be] white, or on account of justice [we are said to be] just.

The fifth chapter is about quality or the category of quality. It contains ten parts. The first is a description of 'quality', the subsequent four are elucidations of the four species of 'quality', the sixth is the description of 'such-and-such', the next three assign three properties of quality, and the tenth concerns a notable point.

Concerning the first part we should note that this description is given in rather improper terms. For when it is said that '[we] are said [to be such-and-such]', grammatically the reference should be to us, [58] and then it could be

58. *'Dicimur' oportet secundum grammaticam supponere istum nominativum 'nos'*. That is to say, the conjugation of the verb demands the first-person plural personal pronoun as its subject.

asked whether 'we' supposited here only for us humans, or whether we are classified here together with stones and animals and other substances. And if it supposited only for humans, then the description would not apply to every quality, for there are many [qualities] that do not characterize humans but only donkeys or stones. But even if 'we' supposited for all substances, this description still would not be true, for there is no quality by which both I and a stone are such and such.

Therefore, for the explanation of this description we should note, analogously to what was said about substance, that the name 'quality' is sometimes taken for abstract terms in the category of quality, and in this way the terms 'whiteness', 'heat', 'knowledge', [etc.] would be said to be qualities; but in another way ['quality'] is taken for the things for which these terms supposit, in the way the heat inherent in fire or the whiteness that I see in the wall are qualities.

We should speak in the same way, analogously, about the name 'such-and-such' [*quale*].[59] For in one way it is taken for the terms that are properly in the category of quality, and those are all the terms that are properly predicated of their subjects in [the category of] quality by denominative predication; it is in this way that the terms 'white', 'sweet', and 'hot' are said to be such-and-such, the abstract forms of which are properly in the category of quality and are called qualities in the above-described way. In another way 'such-and-such' is taken for the things for which these terms from the category of quality supposit, and in this way a man is such-and-such, for he is white, and a stone also, because it is hard.

So let us correct the definition by saying that quality is that on account of which something is said to be such-and-such. And then if 'quality' is defined as it supposits for the aforementioned abstract terms, then 'on account of which something is said to be such-and-such' is expounded as 'the concrete counterpart of which, taken significatively, is predicated denominatively in [the category of] quality [*in quale*]'; and if it is described as concerning things signified by such terms, then it is expounded that a quality is that by which something is such-and-such.

59. Unfortunately, English took over from Latin only the abstract *qualitas* in the form of the term 'quality', but we do not have a corresponding derivative of the concrete, denominative *qualis.*

*3.5.2 First species: habit [*habitus*] and disposition [*dispositio*]*

(1) There are four species assigned to quality. The first is 'habit' or 'disposition'. (2) Habit and disposition are different because a quality that is difficult to remove and separate from its subject is called 'habit', and one that is easily separable is called 'disposition'. (3) And we should note that sometimes easily removable dispositions get so fixed in their subjects over a long time that they become difficult to remove, and then they are called 'habits', as when sometimes an illness that is curable at the beginning becomes incurable after a longer time.

The second part contains three sections. The first assigns the first species of quality under two names. The second posits the difference between those two names, and the third is a notable point.

The first section is to be interpreted in such a way that every term in the category of quality of which the name 'habit' or the name 'disposition' is truly predicated belongs to the first species of quality. And in the foregoing a quality is said to be a 'habit' because on account of it a subject is asserted to be 'habituated' [*habituatum*] or 'established' [*firmatum*] in goodness or in badness, i.e., to act or suffer well or badly. Therefore, the names of virtues and vices are placed in this species, whether they belong to the soul or to the body, such as 'health', 'illness', 'heat', or 'cold', insofar as heat is said to be the power [*virtus*] of fire, or fiery bodies, or even of living things, or of youth, or something similar, and cold is its opposite. But a quality is called a 'disposition' when on account of it a subject is said to be well- or ill-disposed to act, but with the subject still not so established in this quality that it would not be easily changed so as to have the opposite quality, as occurs with young people, who are already habituated to embrace learning and good morals, but nevertheless lose all of this at once, if they are distracted but a little from their studies or should they associate with bad company.

The second section, about the difference between habit and disposition, is already clear both by itself and from what has already been said. Nevertheless, Aristotle in the *Categories* remarks[60] that although the term 'disposition', taken strictly, is distinguished from the name 'habit', still, sometimes the name 'disposition' is taken broadly, insofar as it extends to all the aforementioned qualities on account of which things are well- or ill-disposed to operate, whether these qualities are removable easily or with difficulty; this is why he says that 'disposition' is a broader term than 'habit' and that every habit is a disposition, but not every disposition is a habit.

60. Aristotle, *Categories* 8.8b34–35.

The third section is also clear enough. But from that [observation] and from some others we should conclude that although the terms 'health', 'illness', 'knowledge', 'temperance', 'justice', and the like are placed in this species, we should not think that the term 'habit' or the term 'disposition' is, properly speaking, the genus of those terms. For a genus is predicated truly and universally and always of any of its species, assuming the non-emptiness of these terms [*supposita constantia terminorum*],[61] but this is not the case with these terms, for neither is every [instance of] knowledge a habit, nor is every [instance of] knowledge a disposition, for in someone established in knowledge, knowledge is a habit, whereas in someone else, who did not persevere in study, knowledge is only a disposition, and the case is similar with temperance and justice, with health and illness, and the like. Again, a true genus or species will always be truly predicated of any its individuals, provided that that individual [term] supposits for something, as in the case of this man who, as long as he will be this man, will be a man and an animal, and in the case of this white [thing] which, as long as it will be this white [thing], will be white and colored. But this new present illness of Socrates is a disposition, not a habit, whereas the same becoming chronic will then be a habit, and not [only] a disposition, as is stated in the third section.

Again, it is clear that it has nothing to do with the specific nature of heat or health or illness whether it is easily separable or with difficulty. Therefore it is obvious that the terms 'habit' and 'disposition' add extrinsic connotations to the aforementioned terms, whence they are not predicated of them essentially, as genera, species, and differences should be.

3.5.3 Second species: natural capacity or incapacity

The second species of quality is posited to be 'natural capacity' [*naturalis potentia*] or 'incapacity' [*impotentia*].

We should note that 'capacity' is taken here for a quality by virtue of which its subject is apt to act forcefully, promptly, and well, and perhaps also to resist destructive or harmful influences; also, conversely, 'incapacity' is taken for a quality by virtue of which its subject easily suffers, not being able to resist destructive or harmful influences, or even by virtue of which it is unable to act forcefully, promptly, and well. Whence it is on account of qualities that

61. On the role of *constantia terminorum* in late medieval logic see E. J. Ashworth, 'Existential Assumptions in Late Medieval Logic', *American Philosophical Quarterly* 10 (1973): 141–47.

are called here 'capacities' that someone is said to be strong, robust, or vigorous, as a runner, a wrestler, and the like; and by virtue of qualities called 'incapacities' someone is called soft, weak, sickly, etc.

And it seems to me that the agreement and difference between the qualities of the second and the first species should be characterized in the following manner. These [two kinds of] qualities agree in that both are dispositions to act or suffer well or unwell. But they differ in that if they are innate, deriving from the strong or weak principles of generation, then they are called 'natural capacities' and are said to belong to this species, but if they are acquired by learning or custom or in some other way, then they are said to belong to the first species.

*3.5.4 Third species: passion [*passio*] or passible quality [*passibilis qualitas*]*

(1) The third species of quality is 'passion' [*passio*] or 'passible quality' [*passibilis qualitas*],[62] as 'sweetness', 'bitterness', 'whiteness', 'heat', etc. (2) They are called 'passions' or 'passible qualities' for three reasons: because their subjects are said to undergo [*pati*] changes with respect to these qualities rather than with respect to qualities in the other species, as is clear in bk. 7 of the *Physics*;[63] or because they are apt to affect the senses [*innatae sunt inferre sensibus passiones*], so that they are the proper objects of the senses, or even because they are apt to arise from the passions of the soul, as a blush from shame or pallor from anger. (3) And passions and passible qualities differ in the same manner as we said habits and dispositions differ in the first species, for the [qualities] are called 'passions' that are easily removable from their subjects, and the [qualities] are called 'passible qualities' that are removable only with difficulty.

This part contains three sections. The first calls this species by two names, for every quality that is usually called 'passible quality' or 'passion' is said to belong to this third species. And 'passion' is not taken here in the sense according to which it is one of the categories, but in the senses propounded in the second section.

62. See 1.1.1 n. 6.

63. Aristotle, *Physics* VII.3.248a6.

The second section assigns three reasons why those qualities are called 'passions' or 'passible qualities', the first two of which seem to be quite general, whereas the third seems to be more specific to some colors. But there is some doubt about the first of these reasons. For Aristotle appears to deny it, when he says that something is called a passible quality not because those things that receive them suffer [*patiantur*] but because they are subjectively in the senses. But I briefly reply that what Aristotle says there should be interpreted by adding the word 'only', so that something is called a passible quality not only because . . . , etc. Or it can be interpreted as saying that these qualities are not called passible qualities or passions because their subjects actually undergo change [*patiantur*] with respect to them, for they are called passions or passible qualities even when nothing is actually happening to their subjects, but they are correctly so called because their subjects are apt to undergo change and to alter with respect to them.

The third section states the difference between the two names in question, and is quite clear, although we may note, as we did concerning the first species, that the names 'passion' and 'passible quality' are not properly genera of the species 'whiteness', 'sweetness', and 'heat'; this would be proved in the same manner as it was proved about 'habit' and 'disposition'. Therefore we should not think that the names that are called 'species of quality' here are, properly speaking, species into which the genus 'quality' is immediately divided (for perhaps there are no names imposed on those species, properly so-called). Thus, if they were properly species of 'quality', distinguished from each other and being the genera of inferior species, then the same species *specialissima* would never be placed in several of these species, for diverse genera that are not subordinated to each other have diverse species and differences.[64] But Aristotle puts 'heat' and 'cold' both in the first and in the third species; indeed, they might even be put in the second species, for a man is said to be vigorous on account of an innate well-tempered heat by which he is able to resist illnesses and harmful influences. Therefore, we should, rather, hold that those names signify certain modes of qualities, which are attributed to them on account of some of their properties [*proprietates*], as became clear in the exposition of these names. And this is what Aristotle noted at the end, when he said that perhaps there are even other modes of quality, but these are the most noteworthy ones.[65]

64. Aristotle, *Categories* 3.1b16–17.

65. Ibid., 8.10a25–27.

3.5.5 Fourth species: form or fixed shape of something

The fourth species of 'quality' is called 'form', or the 'fixed shape of something'.

We should note that some terms in [the category of] 'such-and-such' [*in quale*] are appropriately predicable of terms in the category of quantity. For example, 'cubic', 'pyramidal', and 'spherical' [are predicable] of 'body'; similarly, 'concave', 'bumpy', 'circular', 'triangular', and 'rough', of 'surface', and likewise 'straight', 'curved' of 'line', and also 'even', 'odd', 'perfect', 'abundant', 'square', 'cubic', etc. of 'number'. And all the abstract forms of these terms pertain to the category of quality [*praedicamentum qualitatis*]. And since the name 'shape' [*figura*] is not broad enough to cover all such qualities, for it does not properly apply to the qualities of numbers, he [Aristotle] used 'form' [*forma*] at will [*ad placitum*], which in the foregoing is not taken in its wide, common signification but is restricted only to the qualities that are appropriately apt to denominate terms in the category of quantity. For we are also entitled to use the name 'form' in this manner at will, since we do not have another name imposed to cover convertibly all terms in this species.

3.5.6 The description of 'such-and-such' [qualis]

Those things are said to be 'such and such' that are denominated by qualities or [the names of which derive] in any other manner from [qualities], as, for example, 'white' from 'whiteness' and 'literate' from 'literacy'.

Having described 'quality' above, now he [the author][66] describes 'such and such' [*quale vel qualia*]. And his meaning is that all those terms pertain to the category of 'such and such' [*quale*] that are properly predicated denominatively in response to the question 'What is it like?' [*proprie praedicantur denominative in quale*], and that such terms are those concrete terms that are predicated denominatively and that derive from the terms that we called above 'qualities' [*qualitates*].

Two queries can be raised concerning this part. First, "Why didn't Aristotle define 'quantity' [*quantitas*] and 'so much' [or 'of some quantity', *quantum*] above in the same way as he defines 'quality' [*qualitas*] and 'such and such' [or

66. That is, Buridan himself, 'impersonating' Peter of Spain interpreting Aristotle. See the introduction.

'of some quality', *quale*]?"[67] The second query is whether the terms 'quality' and 'such and such' each constitute a category or a most general genus; and it seems that the answer is negative, for otherwise there will be more than ten categories, or most general genera [*genera generalissima*], which seems to be unacceptable.

To the first of these points we can briefly answer that it was sufficient for Aristotle to describe either 'quantity' and 'so-much' or 'quality' and 'such and such', for on the basis of the definition of one of each pair the definition of the other may be construed analogically. For just as those terms are said to be in the category of 'such and such' [*quale*] that are properly predicated in 'such and such' [i.e., in response to the question 'What is it like?', *quale*], so are those terms said to be in the category of 'so much' [or 'of some quantity', *quantum*] that are properly predicated in 'of some quantity' [i.e., in response to the question 'How much?', *quantum*]; and just as something is said to be such and such with respect to some quality, so likewise something is said to be so much [or of some quantity] with respect to some quantity; and just as things are such and such denominatively on account of their qualities, so are they said to be of some quantity on account of their quantities, for in both cases we have abstract and concrete terms.

To the second query I reply that the abstract and the concrete form are not the same genus, but they are diverse genera, and the concrete form is the genus of the concrete [terms] and the abstract form is the genus of the abstract [terms]. For example, if 'art' is a genus of 'music' then 'artist' has to be a genus of 'musician', as is said at the end of bk. 4 of the *Topics*.[68] So 'quality' and 'such and such' are diverse *genera generalissima,* but in the enumeration of the ten categories, or most general genera, they were placed in one class for the reason of the close connection of the abstract term with its concrete term; and the same goes for 'so-much' [*quantum*] and 'quantity' [*quantitas*], for 'acting' [*agere*] and 'action' [*actio*], etc.

We should also note that the author and Aristotle also said: '[their names derive] in just any other sort of manner from [qualities]', for sometimes it happens that a concrete term is not predicated denominatively as a counterpart of an abstract term, for the reason that there are no such abstract names imposed on some qualities (or perhaps sometimes there are such names imposed, but not similar in their formation). For example, as Aristotle remarks[69],

67. In Latin the analogy is much more plausible than in English: in Latin the members of both pairs of these terms are related as abstract to concrete.

68. *Si 'scientia' est genus ad 'musicam', 'sciens' debet esse genus ad 'musicum'*—Aristotle, *Topics* IV.6.128a31–33.

69. Aristotle, *Categories* 8.10b–10b9.

although an artificially trained boxer may correctly be thus denominated on account of [his having acquired] the art of boxing, a "natural" boxer is not called a boxer as denominated by a counterpart of some abstract name, for such a natural capacity [for boxing] does not have a name imposed on it; but otherwise ['boxer'] is predicated denominatively [even in this case], namely, because the name 'boxer' connotes that natural capacity, and this suffices for it to be predicated in the category of quality [*in quale*].

3.5.7 First property: qualities have contraries

There are three properties assigned to quality. The first is that qualities have contraries;this does not apply to all qualities, however, for it does not apply to qualities in between the contraries, as for example to 'red' or to 'redness' nothing is contrary; nor does it apply to shapes, as to triangle or quadrangle.

We should realize that it is in different ways that in the category of 'quality' or 'such and such' [*qualis*], the abstract terms, the concrete terms, and the qualities signified by the abstract terms are called contraries. For the qualities signified by those terms are called contraries in respect of their being, since they cannot be in the same subject at the same time, but they can so be successively, as in the cases of intense heat and intense cold. The abstract terms are called contraries because they supposit for those contrary forms and signify them, as do the terms 'whiteness' and 'blackness'. The concrete terms, however, are called contraries with respect to predication, for they cannot truly be predicated of the same [subject suppositing] for the same [thing], but this can occur successively, as with the terms 'white' and 'black'.

3.5.8 Second property: quality admits of more or less

The second property is that quality admits of more or less; but this does not apply to all qualities, for it does not apply to those in the fourth species.

We should note that the meaning of this property is that terms in the category of quality admit of more or less, that is to say, they can be predi-

cated of their subjects with the addition of the adverbs 'more' or 'less', as for example Socrates is sometimes more and sometimes less white. And Aristotle remarks that this properly applies to concrete terms but not to abstract terms, for we do not say 'more' or 'less whiteness' but 'more white' or 'less white'.[70]

3.5.9 Third property: it is with respect to quality that things are called similar or dissimilar

> The third property [*proprietas*], which is properly exclusive [*proprie propria*] to quality, is that it is with respect to quality that things are called similar or dissimilar.

This property applies to quality in the same way as it is applied to quantity: that it is on account of quantity that things are called equal or unequal. But sometimes the term 'similitude' is taken very broadly, and then it is not only with respect to quality, but even with respect to suffering, or undergoing change, that things are called similar, as Aristotle says in bk. 5 of the *Metaphysics*.[71] But properly speaking things are called similar or dissimilar only with respect to quality.

3.5.10 A notable point

> And we should note that according to Aristotle some terms are correctly listed both under the category of relation and under the category of quality, as are the terms 'habit', 'disposition', and 'knowledge'. Now, this happens for one of two reasons. The first is that in some cases the genera are predicated relatively, whereas the species are not but are said to be qualities, as 'discipline' is predicated relatively, but not so 'grammar' or 'music'. The other reason is that perhaps the same term is predicated [both] in [the category of] quality and in respect of something, whence it is not incorrect to list it under both categories.

70. Ibid., 8.10b29–11a5.

71. Aristotle, *Metaphysics* V.9.1018a16–17.

[The point of] this part is stated by Aristotle in the *Categories*,[72] and it seems to be in conflict with the rule: 'diverse and non-subaltern genera have diverse species and differences'.[73] But I think that this passage is one of those in which Aristotle was speaking in accordance with the received opinion of his age, and not in accordance with his own opinion and the determination of truth. For I believe that, speaking properly about species and genera, it is impossible that a genus should be in one category and its species in another. For every two terms from different categories retain their different modes of predication, because of their different extrinsic connotations. Therefore one is never quidditatively predicated of the other; rather, the one always has some extrinsic connotation beyond the other, or both beyond each other, and this prevents quidditative predication, whereas the genus has to be predicated quidditatively of its species. And thus I also believe that the same term that properly belongs to one category cannot properly belong also to another, except by equivocation. Therefore, as far as the terms 'knowledge' and 'discipline' are concerned, it seems to me that 'knowledge' is properly in the category of quality, and 'discipline' is in the category of relation. For abstract terms are placed in a category as required by the predication of their concrete counterparts. But the terms 'teacher' [*doctor*] and 'disciple' [*discipulus*] are truly predicated relatively to each other, just as 'father' and 'son', or 'master' and 'slave'; therefore the terms 'teaching' [*doctrina*] and 'discipline' [*disciplina*] are truly in that category; for every teacher is a teacher with respect to someone [*ad aliquem*] and every disciple is a disciple with respect to someone, but a knower is not thus said to be a knower with respect to something [*ad aliquid*].

72. "We must not be disturbed because it may be argued that, though proposing to discuss the category of quality, we have included in it many relative terms. We did say that habits and dispositions were relative. In practically all such cases the genus is relative, the individual not. Thus knowledge, as a genus, is explained by reference to something else, for we mean a knowledge of something. But particular branches of knowledge are not thus explained. The knowledge of grammar is not relative to anything external, nor is the knowledge of music, but these, if relative at all, are relative only in virtue of their genera; thus grammar is said to be the knowledge of something, not the grammar of something; similarly music is the knowledge of something, not the music of something. Thus individual branches of knowledge are not relative. And it is because we possess these individual branches of knowledge that we are said to be such and such. It is these that we actually possess; we are called experts because we possess knowledge in some particular branch. Those particular branches, therefore, of knowledge, in virtue of which we are sometimes said to be such and such, are themselves qualities, and are not relative. Further, if anything should happen to fall within both the category of quality and that of relation, there would be nothing extraordinary in classing it under both these heads." Aristotle, *Categories* 8.11a20–40.

73. Ibid., 3.1b16–17.

3.6 Chapter 6: On action and passion

3.6.1 The definition of action and passion

(1) Action is that on account of which something is said to act, and passion is that on account of which something is said to suffer.[74] (2) Every action and passion is some change; and action and passion are the same change, but that change, insofar as it is on its account that something is said to be changing or to be changed, is called passion.

This sixth chapter is about action and passion, or the category of action and passion. And it contains three parts: the first shows what action and passion are, the second discusses the species of actions and passions, and the third is about their properties.

The first part contains two sections, the first of which describes action and passion with respect to the meaning of these names [*quantum ad quid nominis*], and the second of which is concerned with showing what things action and passion are, and how they are related to each other and to change.

We should note that concerning action and passion and the four other remaining categories I do not intend to follow the doctrine of the author of *The Book of Six Principles.*[75] For I think that he was mistaken, since he believed that no terms that pertain to diverse categories can supposit for the same thing, and so he maintained that action is one form and passion is another, and that passion would hence be an effect of action; this is totally false, and thus his doctrine made many people err.

We should note, therefore, that we should posit no difference, except in their names [*secundum vocem*], between *to act* [*agere*] and *to be acting* [or *to be an agent, esse agens*], nor between *to suffer* [*pati*] and *to be suffering* [or *to be a sufferer or a patient, esse patiens*]. For it makes no difference whether we say 'B acts' [*agit*] or 'B is acting' [*est agens*], except insofar as the copula of the proposition is implicit or explicit. Therefore Aristotle explicitly states in bk. 5 of the *Metaphysics*[76] that it is the same thing to recover and to be recovering, to walk and to be walking, to cut and to be cutting, and so forth.

Therefore, as to the first section, it is obvious that just as the terms 'quality' [*qualitas*] and 'such and such' [*quale*] are related to each other as an abstract term and its concrete counterpart, so are 'action' [*actio*] and 'agent' [*agens*], or

74. See 1.1.1 n. 6.

75. *Liber de Sex Principiis,* in *Isagoge, translatio Boethii,* ed. L. Minio-Paluello under the title *Anonymi Fragmentum vulgo vocatum "Liber de Sex Principiis"* (Bruges: Desclée, De Brouwer, 1966), p. 41, l. 8.

76. Aristotle, *Metaphysics* V.7.1017a28–29.

'to act' [*agere*] and similarly the terms 'passion' [*passio*], or 'to suffer' [*pati*], and 'patient' [or 'sufferer', *patiens*]. Hence, if we take the terms 'quality', 'action', and 'passion' and similarly 'such and such', 'agent' and 'patient', insofar as they supposit for the terms in these categories, then, just as a quality is that on account of which something is denominatively said to be such and such, i.e., the term 'quality' is an abstract [term] whose concrete counterpart is the term 'such and such', so also 'action' is posited to be that on account of which something is denominatively called an 'agent', and likewise with passion; this is what had to be meant by those descriptions. Alternatively, if those names are understood insofar as they supposit for the things signified by those terms, then, still, just as something is such and such by a quality, and as something is white by whiteness, so in its own way something is an agent by action and a patient by passion.

As to the second section, it becomes clear what kind of thing action or passion is as soon as it is clear what kind of thing change is, and this is to be investigated elsewhere. But baldly, and without proof, I state here that every natural change requires an agent that acts and produces some form or disposition. Natural changes also require a subject which receives that form, whether that form is a quality, or quantity, or the motion that we call 'locomotion', or even a substantial form. This [produced] form or disposition is the change itself. And so we should realize that just as a house is not a single thing but rather a multitude of things such as the stones, beams, and bricks, so the building of a house is not one change but rather a multitude of changes, i.e., a multitude of locomotions, such as the cutting of this beam and the transporting of that stone to its appropriate place, and so on for the other stones and beams. And just as any one of those beams and stones is called a part of the house, so is any one of those changes called a part of the total process of building the house. And thus there are many actions and many passions here, for any such change is called one action insofar as it is produced by one agent and is called one passion insofar as it is received in one subject, this being what is said to be suffering.

But there are other, supernatural actions, which are called 'creations'. And such a change does not require a subject to receive the thing produced by the creator; indeed, God could create prime matter or a simple intelligence that is received in no subject. Accordingly, I say that that creation, or change, is the thing that is created, and it is called [a] creation, because earlier it is not and later it is, in accordance with the further clarifications to be provided elsewhere. Therefore, that intelligence or matter would in this fashion be a creation or a change, being called an action insofar as the creator would make it, but being called passion not because something is received in it but only be-

cause it comes to be and is introduced into existence. Whence just as to make is to act, so we can say that to come to be is to suffer.

But we should know that something is said to come to be in two ways. In one way absolutely, and without any addition, in the other way in some respect, and with some addition. Something is said to come to be absolutely [*fieri simpliciter*] when it is introduced into existence, so that earlier it is not and later it is. But something is said to come to be in some respect [*fieri secundum quid*], and with some addition, when it comes to be such as it was not before, or to be as big as it was not before, or to be somewhere where it was not before, although [absolutely] it was [i.e., it existed] before, as when Socrates comes to be white or big. From this it is clear that to come to be absolutely is the making [*factio*] itself and the change [*mutatio*] itself; but to come to be in some respect is not the making itself, but rather the subject receiving it. Therefore, also, if we say that every coming to be [*fieri*] is to suffer [*pati*], then that suffering [*pati*] that is to come to be absolutely is the passion [*passio*] itself, and that suffering that is to come to be in some respect is not the passion itself but its subject, which comes to be of this quality [*tale*] or of this quantity [*tantum*].

3.6.2 The species of action and passion

(1) There are two species of action and passion: the first is considered insofar as something comes to be absolutely [*simpliciter*], the second insofar as something comes to be in some respect [*secundum quid*]. (2) That which is considered under the heading of making or coming to be in some respect can be divided in accordance with the concepts of the nine categories of accidents; thus something comes to be white or three cubits long, or a father, or sitting, or armed, etc.

This part contains two sections: the first is the division of 'action' as well as 'passion' into two species, and the second is a subdivision of one of these species.

Now it seems to me quite clear, with reference to the first section, that there is a great difference between 'A man comes to be' and 'A man comes to be white', and similarly between 'A makes a man' and 'A makes a man white'. Therefore the names 'becoming' [*fieri*] and 'making' [*facere*] are indeed of diverse concepts [*ratio*] depending on whether they are taken absolutely or with respect to something; and thus they are of diverse species. Indeed, if the concrete [terms] are of diverse species, then it is necessary that the abstract

[terms] be of corresponding diverse species too; therefore, if the same name is the abstract counterpart of concrete terms relating to different concepts, then this has to come about by equivocation. For example, the name 'change' [*mutatio*] is the abstract form of the concrete terms 'changing' [*mutare,* causing something to change] and 'being changed' [*mutari,* undergoing change], but with respect to different concepts. For in terms of one [concept the term 'change'] is in the category of action, insofar as in accordance with [this concept] something is called a changer, but in terms of the other [concept] it is in the category of passion, insofar as in accordance with [that concept] something is said to be changed.

Again, we should also realize that there is a great difference between coming to be absolutely [*simpliciter*] and [coming to be] in some respect [*secundum quid*], as was touched upon before. For coming to be absolutely is the very [process of] making [*factio*] itself; for that which comes to be, in such a fashion that earlier it is not and later it is, is the very making itself. But that which comes to be such and such, or this big, or something like this, is not the making itself but is its subject. And this is what is usually said, namely, that something is said to become or suffer, or to be generated or destroyed subjectively [*subiective*],[77] and it is something that comes to be or is destroyed in some respect, and yet something else comes to be or is destroyed terminatively [*terminative*],[78] and that comes to be or is destroyed absolutely.[79]

We should also note that the consequence '[A thing] comes to be white; therefore, [a] white [thing] comes to be' is not valid, for the sense of the antecedent is that something becomes white, and this is coming to be in some respect, but when I say '[A] white [thing] comes to be', this means that the thing for which the term 'white' supposits comes to be absolutely. In the same way it does not follow that if a builder makes [something into] a house, then he makes a house, for it is not necessary either that if [something] comes to be a house, then a house comes to be.[80] But then you ask whether he makes something. And I reply: yes, indeed, he makes a lot of things, namely, all those movements by which he transports and puts together the stones, the beams,

77. Obviously, 'subjectively' is to be taken here in the sense of 'in a subject that undergoes change' and not in the modern sense of *subjectivity,* having something to do with what is only in someone's consciousness.

78. That is, in such a way that it itself is the terminus of the change.

79. Here I corrected the Hubien text on the basis of the critical edition.

80. *Et ita etiam non sequitur si domificator facit domum quod ipse domum faciat, quia etiam non oportet si fiat domus quod domus fiat.* Buridan's point here, just as above, is that the generation of a house is not a generation absolutely speaking but the making of some preexisting substance into something, which is an accidental change. In Buridan's "regimented," technical Latin this distinction is marked by word order.

and the bricks; it is by these movements that they get so related to one another that they are called a 'house' and that they are a house.

As to the second section, it is obvious that the genera of changes, and consequently of actions and passions, are distinguished with respect to the ten categories. For if something comes to be white or black, then this is called alteration, if two or three cubits long, then this is called growth, and if it comes to be here or there, then this is called locomotion. But with respect to the other categories, according to Aristotle,[81] the species of changes, i.e., of actions and passions, are not diversified *per se;* for if someone comes to be shod, or sitting, this comes about by the locomotion of his shoes or members, and if he comes to be a father, this occurs by generation, or by alteration, or by the ejaculation of sperm by locomotion.

3.6.3 Four properties of action and passion

(1) There are two properties assigned to action and passion in the *Categories,*[82] and one in bk. 5 of the *Metaphysics.* The first is to have a contrary, as for example warming something up and cooling something down are contraries, and so are something's getting warm and something's getting cold. (2) The second property is to admit of more or less; for something is said to be warming more and another less, and something is said to get warm more and another less. (3) The third property is assigned in bk. 5 of the *Metaphysics,*[83] namely, that 'agent' and 'patient' are predicated correlatively to each other, as also are 'active' and 'passive'; thus every cutter is a cutter of what is being cut and everything that is being cut is being cut by the cutter, and similarly everything that is able to cut is able to cut that which can be cut by it, and everything that can be cut can be cut by that which is able to cut it, and so forth.

The third part contains three sections, namely, [descriptions of] three properties. As to the first, it seems doubtful whether warming and cooling are contraries, or even hardening and softening, or gladdening and saddening, and so forth. Rather, it seems that they are not [contraries], for contraries do not apply to the same thing at the same time, whereas the same thing, namely, what is lukewarm, can both warm something up and cool something down,

81. Aristotle, *Physics* III.1.200b12–25.

82. Aristotle, *Categories* 9.11b1–2, esp. 11b2.

83. Aristotle, *Metaphysics* V.15.1021a19.

namely, warm what is cold and cool what is hot; similarly, the same fire would harden a brick and soften a piece of wax, and the judge by the same sentence gladdens the party in whose favor he rules and saddens the adversary. In response to this one might say that perhaps the aforementioned terms are not contraries to each other, except on account of their abstract counterparts, or they are said to be contraries and incompatible only in the sense that they cannot be truly predicated of the same thing at the same time and in respect of the same thing, but this can occur successively.

The second section is obvious, for the said terms are predicable of their subjects with the addition of the adverbs 'more' and 'less'.

The third section is doubtful, because in view of what it says it would appear that these categories are not distinct from the category of relation [*ad aliquid*], which is unacceptable. But one may reply that it is not on account of just any relationships between terms that these terms are said to pertain to the category of relation, but only if they are properly predicable of their subjects with the addition '[with respect] *to* something' [*ad aliquid*], as a father is a father [with respect] to something, and a slave is a slave [with respect] to someone, and a double is a double [with respect] to something, although it is also said to be the double *of* something. But that which is making is not said to be making [with respect] to something (for this would be a very improper locution), but is only just said to be making something; neither is something said to come to be [with respect] *to* something, but *from* something. Also, in the same way, although what is white is said to be white by whiteness, and whiteness is said to be the whiteness of the white thing, this does not make these terms properly pertain to the category of relation [*ad aliquid*], for we do not say that a white thing is white [with respect] to whiteness, but *by* whiteness, or *on account of* whiteness. And if sitting is called someone's sitting, or a habit someone's habit, we nevertheless do not say that someone wearing a cap is wearing a cap [with respect] to something, nor that someone sitting is sitting [with respect] to something. Therefore these are distinguished from terms that are properly in the category of relation.

Finally, concerning these two categories, it is queried about the terms 'destruction', 'destroyer', 'destructive', and 'to be destroyed' whether they are in the categories of action or passion, or to act or to suffer. But this should instead be discussed in principal philosophy.[84] We can say superficially, however, that if something is said to be destroying by not doing that without which the thing that is said to be destroyed is unable to persist, then the name 'destroyer' is privatively related to the name 'agent', for it would be said to destroy because

84. That is, in natural philosophy, or in metaphysics, which are "principal" in comparison with the propaedeutic logical considerations.

it did not maintain or conserve the thing which for its existence needed that it be maintained or conserved by the former, as we say that the absent pilot is the cause of the sinking of the ship, as is asserted in bk. 2 of the *Physics*.[85] But privative names are reduced to the categories of the [corresponding] positive terms, as 'darkness' is in the category of quality because 'light' is in that category, and 'ignorance' is in the category in which 'knowledge' is placed, and 'unit' and 'point' are in the category of quantity.

These are the sorts of things that may be said about actions and passions, the correction or more thorough discussion of which is requisite in the relevant passages of the *Physics* and the *Metaphysics*,[86] and also in bk. 6 of the *Ethics*,[87] insofar as the name 'action' is restricted to the workings of prudence and the name 'making' to the workings of art, since for the present we have discussed them only insofar as they are used synonymously with each other.

3.7 Chapter 7: On time, place, position, and habit

3.7.1 The category of time

> Terms in the category of time [*quando*] are those that properly answer the question 'When?' [*quando?*], or the genera of such terms, as for example 'today', 'tomorrow', 'yesterday', 'once', '[in] this year', 'in the tenth year from now', 'in the year of our Lord one thousand three hundred', etc.

The seventh chapter is about the remaining four categories, namely, time [*quando*], place [*ubi*], position [*situs*], and habit [*habitus*], and it contains four parts corresponding to those four categories.

We should note that Aristotle said that these four categories are so obvious that it was sufficient to explain them by examples.[88] The author of *The Book of Six Principles*,[89] however, made what was manifest obscure, believing that [to

85. Aristotle, *Physics* 2, chap. 3, 195 a13–14.

86. Ibid., e.g., I.9.192a31–32; Aristotle, *Metaphysics* V.15.1020b26, 1021a14–15.

87. Aristotle, *Nicomachean Ethics* VI, 5, esp. 1140 b6–8.

88. Aristotle, *Categories* 9.11.b12–14.

89. *Liber de Sex Principiis,* pp. 42–48. See 3.6.1.

be at] some time [*quando*] was a disposition, distinct both from time and from the temporal thing, left behind by time in the temporal thing.

But then one has to query what such terms in the category of time signify, and for what they supposit, for if they do signify time, then why are they not in the category of quantity, as is 'time'? Indeed, why are they put in the categories at all, given that they are syncategorematic words? Again, since terms in the categories should be incomplex, how can we say that such a complex expression as 'in the year of our Lord one thousand three hundred . . .' is in a category? Again, these are oblique terms, which I do not think can be subjects or predicates of propositions in themselves, whereas categorical terms should be capable of being subjects or predicates. These are the queries concerning this point.

And in response I say first that the name 'time' signifies the motion of the heavens and it supposits for the motion of the heavens, insofar as other motions and states of rest as well as the duration of the existence of things are measurable by it, all this along the lines determined in bk. 4 of the *Physics.*[90] The terms signifying this kind of motion and time fall into two classes in this regard. Some of them answer the question 'How long?' [*quantum?*], asking about things with respect to their duration or successive actions attributed to them, as when we ask: 'How long is (or was) Socrates' walk?', and we reply that [it took] one, or two, hours; and [to the question]: 'How long did Plato live?', we reply [that he lived] for sixty years, and [to the question]: 'How long did Socrates stay in Plato's house?' we reply [that he stayed there] for three days. And thus the predicates 'one (or two) hours', 'for sixty years', 'for three days', and the like are in the category of quantity and not in the category of time [*quando*], for they do not respond to the question 'When?' [*quando?*].

But there are other terms signifying this sort of motion and time that do not respond to the question 'How long?' but rather to the question 'When?' For these do not signify for how much time [i.e., how long] a thing is or was or will be, but they signify determinately at what time a thing is, was, or will be, with respect to a certain distance from the present time (which is known to us, since it is with us), or even sometimes with respect to the nearness or distance of some past or future time fixed for us, such as the time of the incarnation of our Lord. For example, it is in this fashion that it is said, in bk. 4 of

90. See J. Buridan, *Quaestiones in Praedicamenta,* ed. J. Schneider (Munich: Verlag der Bayerische Akademie der Wissenschaft, 1983), q. 18, p. 145 n. 7, where the editor refers us to J. Buridan, *Quaestiones super octo Physicorum libros Aristotelis: Kommentar zur Aristotelischen Physik* (Paris: 1509; reprint, Frankfurt am Main: Minerva, 1964), bk. 4, q. 12, conclusions 3–4, f. 78vb.

the *Physics*,[91] that the word 'now' means the same as 'in a short present time', as when we utter the proposition, but 'next' means the same as 'at a time close to the aforementioned now', and 'recently' is the same as 'at a time not very far from the present, and 'once' and 'once upon a time' mean the same as 'at a time very far away from the present'. And thus it is clear that these terms are in the category of time, for they are predicated in this way and involve no other mode of predication pertaining to other categories.

Sometimes we also respond to the question 'When?' not by such adverbs but by declinable words,[92] as for example that such and such was said last year, that so and so was born in the year A.D. 1300, that Aristotle lived a thousand years before the Incarnation of Christ, and so forth. And all such predicates pertain to this category, for example, 'today', i.e., 'on the present day' and 'yesterday/tomorrow', i.e., 'on the day immediately preceding/following the present day'. So if you were to ask: 'What do these predicates signify?' I reply that they signify or connote certain times and their distances from the present, where these distances are but intervening times, and also connote that those times are, were, or will be simultaneous with the things of which we ask when they were or will be. And these all are just the things and the times of this sort that the soul understands to coexist with those things, and, understanding them in this manner, attributes to them these names, [thus] designating them.

But then you would ask: 'For what do such names supposit?' To this we should say that in a true affirmative proposition the predicate supposits for the same [thing] as the subject supposits; so if you said: 'Aristotle was at such and such a time', it is obvious that the subject supposits for Aristotle, and hence the predicate would too (if it were completed). But if the oblique term [namely, the term 'at such and such a time'] cannot be a complete predicate or subject, we have to supply a nominative, saying that Aristotle was a being at such and such a time. But if we tell when Socrates disputed, saying that Socrates disputed yesterday, then you should analyze this into the claim that Socrates was a disputant yesterday, and then you have the subject and the predicate suppositing for the same thing, so that the word 'yesterday' is a determination on account of which the total predicate acquires the mode of predication characteristic of the category of time. Hence it can be said to pertain to the category of time, although not as a total predicate but as a determination on account of which the total predicate is predicated in the category of time. If,

91. Aristotle, *Physics* IV.13.222a10–12, 222b7–11, 222b12–14.

92. That is, words that have grammatical declension, as opposed to those that do not, such as conjunctions.

however, more loosely speaking, we allow oblique terms to supposit, as in saying that in 'Socrates' donkey runs' 'Socrates" supposits for Socrates, then we would say that 'yesterday' supposits for that day.[93]

But then it is queried further why we place such syncategorematic terms among the categorematic terms. I reply that if those terms are indeclinable by convention, we should not, for that reason, call them syncategorematic absolutely; indeed they are taken to be predicative, as has been said, for the reason that they are determinations on account of which total predicates have such modes of predication.

But then you have doubts with respect to the fact that many of these terms are complex. I reply that such complexity, involving a determination and a determinable, does not prevent them from being correctly predicable terms. This would, however, be prevented, were the complex made up from a name and a verb that constitute a proposition, for a proposition taken significatively can never be predicated of something.

Further, we should realize, again, concerning all the categories, that different terms pertain differently to the same category. In one way [they function] interrogatively, as do 'What?' [*quid?*], 'How much?' [*quantum?*], 'What is it like?' [*quale?*], 'When?' [*quando?*], and 'Where?' [*ubi?*], whereas others function predicatively, for example, 'something' [*aliquid*], 'of some quantity' [*aliquantum*], 'of some quality' [*aliquale*], 'sometime' [*aliquando*], and 'somewhere' [*alicubi*]; for to be a man is to be something, and to be three cubits long is to be of some quantity, and so on, even in quidditative predication, so that to be white is to be of some quality, and to be today or to have been yesterday is to be or to have been sometime, and to be in a house is to be somewhere. Indeed, Aristotle often uses those interrogatives as predicatives, and in this way 'What?' is equivalent to 'something', and 'What is it like?' to 'of some quality', etc.; and it was [also] Aristotle's habit to name the categories in this manner.[94] Again, other terms pertain to the categories as distributives, as do 'whatever' [*quidquid*], or 'anything' [*quodcumque*], or 'of any quantity' [*quantumcumque*], or 'of any quality' [*qualecumque*], 'anytime' [*quandocumque*], 'anywhere' [*ubicumque*], and still others as relatives, as do 'that' [*illud*], 'as big' [*tantum*], and 'such' [*tale*]. For thus we would say that Socrates is something and that [thing] [*illud*] is a man, and that Socrates is as big [*tantus*] as Plato, and that what Socrates is like, such [*talis*] is Plato, and that when Socrates lectured, then [*tunc*] Plato listened, and that where Socrates lectured, there [*ibi*] Plato listened; and the same would go for the other categories if there were appropriate inter-

93. See 4.1.4.

94. That is, to use interrogatives as names of the categories, given that the predicables of the categories are distinguished by what simple question they answer properly.

rogative and relative names imposed. Let these be [all] the things said [here] about time.

3.7.2 The category of place

> Terms in the category of place are those that appropriately answer a question formed by 'Where?', or the genera of those terms, as are 'here', 'there', 'in Socrates' house', or 'in front of his house', or if it is asked: 'Where is the manor of Saint Denis?', it is replied that it is two miles north of Paris.

Concerning the category of place many things should be noted analogously to those noted concerning the category of time; therefore, I do not repeat those things here. But I say that not all those predicates signify place properly speaking, but sometimes they signify bodies, whose locations are known to us together with their relation to that of which we ask where it is, as when we are speaking about the manor of Saint Denis, and when we say that Socrates is in front of Plato's house, or on the top of his house, or beside Plato, or between Pont Neuf and Petit Pont, etc.

3.7.3 The category of position

> Terms in the category of position do not have a common interrogative imposed on them. But using a roundabout description it can be said that those predicates pertain to the category of position that are predicable of subjects that supposit for wholes having parts with determinate positions relative to each other and relative to their places, or even [terms that are] predicable of subjects suppositing for the parts of those wholes, however, in such a manner that these predicables are verified differently of these subjects depending on the positions of those parts relative to each other in their whole and relative to the place of their whole, as are 'to sit', 'to stand', 'to lie', etc.

It is obvious that although a man remains the same, his members are not positioned in the same way relative to each other when we say that he is lying, sitting, or standing. Indeed, even if the parts are positioned in the same way

relative to each other when he is lying and when he is standing, nevertheless, they are not positioned in the same way relative to the place; and if the members of a sitting man were to remain bent in the same way, but he were to be turned upside down, he would no longer be said to be sitting; hence such predicates are in the category of position. But so also is the term 'house', for the stones, beams, and bricks thus and so positioned relative to each other and relative to the place are called a house. For if they were scattered, or thrown together into a heap, they would not be a house; and the same piece of wood, thus and so positioned, is called a 'beam', whereas positioned in another way it is called a 'column'; again, stones thus and so positioned are called a 'wall', but positioned in another way, in an alley and laid over the ground, they are called a 'pavement', and so on for many other cases. And it is obvious that such terms cannot be placed in any of the aforementioned categories, for they are not predicated according to the modes of predication according to which those categories are distinguished, as should be clear to anyone willing to check on this by induction. It is also manifest that by virtue of their signification we need not posit anything in external reality, except those wholes and their parts and places. And if those predicates cease or come to be true of the same thing or things, then this comes about only by the locomotion of those wholes or their parts, as on account of these motions those parts change their position relative to each other and relative to the place; and the soul, understanding them as thus and so positioned, imposes those names on them.

3.7.4 The category of habit

(1) About the category of habit [*habitus*], just as about the category of position, we shall speak by circumlocution, noting first that since 'to have' [*habere*] is asserted in many ways, according to those different ways it pertains to different categories. (2) But the category of habit, as it is distinguished from the other categories, contains properly the terms by which a body is said to wear some habit on account of the adjacency of some extrinsic body, by way of some equipment or outfit, or perhaps some weapon or symbol of power, as the terms 'clad', 'shod', 'crowned', 'ringed', 'armed'.

There are two sections here: the first is about having or habit insofar as it pertains to the other categories, and the second is about the same pertaining to this last category.

As to the first, it is clear that when we say that a man has whiteness, we mean nothing more or less than that he is white or that one of his parts is white; and this [having] pertains to the category of quality. And if we say that a man has some quantity, this means that he is of some quantity, and this [having] pertains to the category of quantity. And if we say that a man has some action or passion, or some capacity to act or to suffer, then this means that he is acting or suffering, or that he can act or suffer; and this [having] pertains to the category of action or passion. And if we say that Socrates has a father, this means that he is a son, and this [having] pertains to the category of relation; indeed, we generally use this manner of speaking with genuine relatives, as when we say that the master has a slave and the slave has a master, and the husband has a wife and the wife has a husband, and a cause has something caused and something caused has a cause, and the whole has parts and the parts have a whole, and so forth.

As to the second section, it is obvious that terms such as 'capped', 'armed', etc. do not belong to any of the previously mentioned categories, for they do not preserve their modes of predication. Therefore it is necessary that they pertain to another category, namely, to the one whose abstract form is assigned to be the term 'habit' and whose concrete form is the term 'habited' [i.e., 'dressed', 'equipped', etc., *habituatum*]; whence to be capped is to be habited, by essential predication. Therefore, by 'having' and 'being had', insofar as they belong to this category, we should understand the same as 'being habited' or 'being a habit'; for example, someone having a cap is someone habited, and the cap is the habit by which he is habited. Therefore, according to this meaning of having and being had, as we speak about them here, they can be said to be *genera generalissima,* just as are [the terms] 'such and such' [*quale*] and 'quality' [*qualitas*], or 'agent' [*agens*] and 'action' [*actio*].

We should finally note that such names as 'armed' and 'dressed' should not be interpreted in terms of their being past participles deriving from the verbs 'to arm' and 'to dress', but they should be taken nominally, so that if you had worn your present dress from eternity just as you have it on now, we would still call you dressed in the sense in which such names pertain to this category, although you had never dressed [up]. Therefore it is not necessary that these terms pertain to the category of action or passion. Let these be [all the things] said [here] about the categories.

3.8 Chapter 8: On the genera of opposition

3.8.1 The kinds of opposition

One thing is said to be opposed to another in four ways, namely, relatively, as 'double' and 'half', contrarily, as 'good' and 'bad', privatively, as 'sight' and 'blindness', and contradictorily, as 'is sitting' and 'is not sitting'.

The eighth chapter is about the kinds of opposition, the reason for this being that in discussing the categories Aristotle often spoke about their having or not having a contrary;[95] therefore, in this chapter I would like to discuss them. It contains five parts, the first of which enumerates the kinds of opposition, the second deals especially with relative opposition, the third is about contrary opposition, the fourth is about privative opposition, and the fifth is about contradictory opposition.

We should note that, properly speaking, the oppositions treated of here hold only between propositions or significative terms except perhaps in the case of contrariety. The sufficiency of these kinds of opposition is shown in the following manner. Opposite terms are opposed either because one includes[96] the negation of the other, for which reason they cannot be predicated simultaneously of the same thing, or because, even without the inclusion of the negation [of the other], incompatibility results if they are predicated simultaneously of the same thing. If they are incompatible on account of an included negation, then that negation is either absolutely negating or it negates some disposition, whereas it connotes or supposits for a determinate subject; the first case is called contradictory opposition, whereas the second is called privative opposition. If, however, the terms are simply positive, then it is either absolutely incompatible with them that they should be verified of the same [term supposing] for the same [thing], or this is not absolutely incompatible with them, but only with respect to the same thing. In the second case we have

95. Aristotle, *Categories,* e.g., 5.3b25, 5.4 a11–b18, 6.5a31–b15, 8.10b14.

96. Although the term Buridan uses here is *implicat,* 'implies', he does not have in mind what we in English would refer to as 'implication'. For of course in the latter sense 'black' implies the negation of 'white', since whatever is black has to be not white. What Buridan means here, however, is the inclusion of the concept of negation of the other in the concept of one of the opposites, as is the case with privative or contradictory opposites. As a matter of fact, in 3.8.3. Buridan also uses the term *inclusio* to describe this conceptual relationship. See text at n. 98 below.

relative opposition. In the first case there are two alternatives: in the first, although those terms cannot be simultaneously verified of the same [term supposing] for the same thing, they can, nevertheless, [be verified] successively [of the same term supposing for the same thing], as, for example, 'white' and 'black', 'warm' and 'cold', etc., and this is called contrariety; in the second, neither simultaneously nor successively can [those terms] be verified of the same [term supposing] for the same thing, and then they are not properly called contraries, nor opposites, but they are disparate terms, as are 'man' and 'donkey', 'whiteness' and 'sweetness', 'sun' and 'God', etc.

3.8.2 Relative opposition

> Terms in the category of relation [*ad aliquid*] that are predicated correlatively to each other are said to be opposed relatively, as are 'father' and 'son', 'master' and 'slave', 'double' and 'half', etc.

Relative opposition is said to obtain on account of the incompatibility [*repugnantia*] [between two terms] in [their] being predicated simultaneously of the same [term supposing] for the same [thing] and with respect to the same [thing], even if they can be verified simultaneously of the same [term supposing] for the same [thing], but with respect to different things; for the same [man] is a father and a son, but not with respect to the same [person], and the same thing is double and half with respect to different things, but not with respect to the same thing.

But in the case of some correlatives we find that they are verified of the same [term supposing] for the same [thing] and with respect to the same thing, as 'cause' and 'caused', for some causes are causes of each other (for example, matter and form, on which one should consult bk. 2 of the *Physics* and bk. 5 of the *Metaphysics*;[97] whence the same matter with respect to the same form inhering in it is both cause and caused), but this applies to different species of cause and different species of caused, for with respect to the same species of cause and the same species of caused the aforementioned opposition and incompatibility would obtain.

Again, it seems to me that we should hold that this sort of opposition between correlatives has no place between relations of parity, as they are of the same nature and have the same name. For such are not to be called opposites,

97. Aristotle, *Physics* II.3.194b24–31; Aristotle, *Metaphysics* V.2.1013a24–30.

as [what is] similar and [what it is] similar [to], and [what is] equal and [what it is] equal [to].

3.8.3 Contrary opposition

(1) Contrariety is sometimes considered between significative terms, as are the terms 'white' and 'black', or 'warm' and 'cold'; (2) sometimes between propositions, as are the propositions 'Socrates is white', 'Socrates is black', or 'Every man runs', 'No man runs'; (3) and sometimes between things that are neither significative terms nor propositions, as are whiteness and blackness, and warmth and coldness.

In this part there are three sections, corresponding to the three different modes of contrariety. The first mode is that of significative terms, and for this [to obtain] several [conditions] are required. The first is that both terms be positive, i.e., that they not include negations [*scilicet sine inclusione negationis*].[98] Second, it is required that they cannot be verified of the same [term supposing] for the same [thing] at the same time. Third, that they can be verified of the same [term supposing] for the same [thing] successively. Fourth, for contrariety of terms in the strictest sense to obtain it is required that these terms be maximally distant in their signification, in the sense that they should be incompatible on account of their signifying or connoting dispositions that are maximally distant in the transmutations between themselves in the way to be explained in the third section. Now by the first of these conditions contrariety is distinguished from privative and contradictory opposition, by the second it is distinguished from relative opposition, by the third it is distinguished from disparity, and the fourth eliminates the relation that holds between contraries and their intermediates (for, strictly speaking, we would not say that 'warm' and 'lukewarm' or even 'almost warm' and 'almost cold' are contraries, but [we would say] that the terms 'warmest' and 'coldest' are).

We should nevertheless realize that contrariety is often taken more broadly, so that the last condition is not required, but the first three are sufficient. So it is in this sense that it is said in bk. 5 of the *Physics*[99] that every motion, except, at least, circular motion, is from a contrary to a contrary (and this is how Aristotle admits contrariety in quantity), and between the extremes and their intermediates, or even between different intermediates of the same extremes.

98. See n. 96 above.

99. Aristotle, *Physics* V.2.226b2–3.

We should also note that in another sense even some other terms are admitted to be contraries, although they cannot be verified either simultaneously or successively of the same [term suppositing] for the same [thing]; this is because they signify contrary forms and supposit for them, as do for example the terms 'whiteness' and 'blackness', or 'warmth' or 'coldness', and the like.

As to the second section we have to say that the contrariety of propositions is taken in two ways. In one way this is with respect to the contrary modes of enunciation, as when a universal affirmative and a universal negative having the same subject and predicate are said to be contraries; this contrariety was sufficiently discussed earlier.[100] In the second way this is with respect to the contrariety of their predicates, namely, insofar as contrary terms are affirmed of the same singular term, or of the same distributed common term, as in 'Socrates is white' and 'Socrates is black', or in 'Every man is white' and 'Every man is black'.

We should know also that there are propositions that are opposites in the other three kinds of opposition, namely, contradictorily, as in 'Every man runs' and 'Some man does not run', privatively, as in 'Socrates is sighted' and 'Socrates is blind', and relatively, as in 'Socrates is Plato's father' and 'Socrates is Plato's son'.

As to the third section, we should note that things that are neither conventionally significative terms nor propositions are said to be contraries on the basis of three conditions, just as was said concerning terms. The first is that they should be forms or dispositions that cannot be in [*inesse*] or pertain to [*adesse*] the same thing at the same time by real inherence; the second is that they, or their similitudes, can be in the same thing successively; the third is that they should be maximally distant with respect to their transmutation in the same thing, as would be maximal warmth and maximal coldness. Sometimes, however, as has been said concerning terms, contrariety of forms is taken more broadly, so that the third condition is not required, but the first two are sufficient; and in this way being lukewarm would be said to be contrary to intense warmth and intense coldness.

Further, we should note that contraries do not have to be maximally distant by a distance of magnitude or extension, but with respect to the transmutation of one into the other in the same subject, so that contrary forms or dispositions should be the extremes of possible transmutations with respect to their species. For example, since warming up is the transmutation from coldness into warmth, and cooling down conversely, the greatest warming up would begin with maximal coldness and would end in maximal warmth, and the

100. See 1.4.4.

greatest cooling down [would take place] conversely. But no lesser warmth would be an extreme, or a terminus, of the greatest warming up, for the subject could still get warmer. Thus, therefore, maximal warmth and maximal coldness are said to be maximally distant with respect to the transmutation from the one to the other, because a change in this species could not begin from a prior beginning, nor could it proceed to a further end. And this is how the place of the center [of the universe] and the concave [surface] of the orbit of the moon are said to be maximally distant with respect to ascent and descent, for it is not possible by nature to descend from a higher or to a lower place, or conversely to ascend.

We should also note that there is an objection usually raised concerning such contraries, for if B is the warmest, it seems that no coldness is the contrary of its warmth, for if a coldness were its contrary, it would be asked where or in what subject that would be. And let us assume that it is in a subject A, from which it immediately follows that the warmth of B and the coldness of A are not contraries, for they cannot be in the same subject successively, since neither of them can be separated from its subject without its destruction.

But the solution of this doubt is that every maximal warmth is contrary to every maximal coldness, in whatever subject they might be, which is obvious from the fact that if they approached each other, they would destroy each other. This is why I said in the second condition disjunctively that contrary forms or their similitudes can be in the same [subject] successively. Therefore, although the warmth of B cannot be in A, another similar warmth can. This suffices for the second condition.

3.8.4 Privative opposition

Privative opposition holds between terms that are aptly predicated of the same subject so that one includes the other with a negation that is neither negating nor infinitizing, as do the terms 'blind' and 'sighted', 'to move' and 'to rest'. And consequently the abstract counterparts of such terms are also said to be opposed privatively, as are 'sight' and 'blindness', and 'motion' and 'rest'.

We should note that privatively opposed terms can never be simultaneously verified of the same subject [suppositing] for the same [thing]. There are many [such terms], however, that are aptly verified successively of the same [subject suppositing] for the same [thing], as 'sighted' and 'blind', 'to move'

and 'to rest', 'to know' and 'to be ignorant of', and many others. But there are also many others that can be neither simultaneously nor successively verified of the same [subject suppositing] for the same [thing]. First, this is obvious about either all or most abstract terms, for a privative abstract name supposits for the subject deprived, whereas the positive abstract name supposits for the form inhering in that subject, as 'deafness' supposits for the ear and 'hearing' for the auditive power inhering in the ear; but that subject can never be that form. But in many cases [even] the concrete terms cannot be verified of the same [subject suppositing] for the same [thing], either simultaneously or successively, as, for example, 'corruptible' and 'incorruptible', 'corporeal' and 'incorporeal', 'extended' and 'unextended'.

This is why Aristotle distinguished the different modes of privation in bk. 5 of the *Metaphysics*.[101] For in one way a thing is said to be deprived because it lacks some disposition that some other thing is capable of having, but this thing is not, nor is anything else from its species or genus, as when we would say that a plant is deprived of sight or that the intellect is invisible. But something is said to be deprived in the strictest sense if it lacks a disposition that it is capable of having, at the time when it is capable of having it; this is how the terms 'blind', 'deaf', and 'eunuch' are said to be privative.

But somebody might object concerning what we said that 'to move' and 'to rest' are opposed privatively, for what rests can move again, and [yet] Aristotle in the *Categories*[102] says that it is not possible to be reverted from a privation to having. Solution: I say that Aristotle's claim should not be understood universally but only as concerning cases in which the privative term signifies not only the lack of some act but also the lack of the power [*potentia*] for that act, as 'blind' not only signifies the lack of the act of seeing, for then even someone asleep would be blind, but rather it signifies the lack of sight and of the power of sight.

We should also note that a negating negation does not render a term privative, as in 'nobody' and 'nothing', nor does an infinitizing negation, as in 'non-man'. For a term that is not capable of being truly predicated of anything, as the term 'chimera', can be infinitized (for we can say that a man is a non-chimera); but of privatively opposed terms both should be capable of being predicated of something, which is why we say that a privation connotes an aptitude [for being] in a subject.

101. Aristotle, *Metaphysics* V.22.1022b23–1023a25.

102. Aristotle, *Categories* 10.13a34–35.

3.8.5 Contradictory opposition

> Contradiction, properly speaking, pertains only to propositions. But sometimes the name 'contradiction' is extended to terms, and this how we say that the terms 'man' and 'non-man' or 'sits' and 'does not sit' contradict [each other], so that the finite term is said to contradict its infinite.

This part is obvious, for earlier we sufficiently discussed contradictory propositions. A finite and an infinite term are said to be opposed in this way because they can never be simultaneously verified of the same [term supposing] for the same [thing], and of any term supposing for something it is necessary that one of them be true. This is the opposition that we call a 'contradiction in terms'.

3.9 Chapter 9: On motion

3.9.1 The species of motion or change

> Of 'motion' there are six species, namely, 'generation', 'destruction', 'growth', 'diminution', 'alteration', and 'change of place'. Since every action or passion is motion insofar as the name 'motion', taken broadly, is extended to all change, therefore, after considering the categories, Aristotle discussed the six species of motion in his *Categories;*[103] this he did briefly, because any more profound discussion of these pertains to other and higher sciences.

The ninth chapter, therefore, will deal with the species of motion or change. It contains two parts: the first is the enumeration of the species of motion, the second is about the contrariety of motions and states of rest.

Of the first part, insofar as it concerns logic, we should know first that motion, or change, is sometimes predicated with respect to substance, sometimes with respect to quality, and so on for the other categories. A change is called 'substantial' when a substance, not a *per se* existing substance but a predicate from the category of substance, is truly affirmed earlier and denied later

103. Ibid., 9.11b1 ff.

[or conversely] of the pronoun 'this', as [in saying that] this is a man earlier and is not a man later, or is not a man earlier and is a man later, taking both 'earlier' and 'later' for the present time, as is to be explained more fully in *Physics.*[104]

That change is called 'qualitative' on account of which there is a change in the reply to the question 'What is it like?' [*quale?*] concerning a subject suppositing for the same thing earlier and later, as when we say that earlier this is white and later black, or earlier warm and later cold; and, as such, this kind of change is called 'alteration'. But that change is called 'quantitative' on account of which there is a change in the reply to the question 'How big [much or many] is it?' [*quantum?*] concerning a subject suppositing for the same thing earlier and later, as when we say of a plant today that it measures two feet and tomorrow that it measures three feet. And a change of this kind, as such, is called 'growth'; and change in this way takes place from the lesser to the greater, but it is called 'diminution' if it takes place conversely. And that change is called 'change of place' [*loci mutatio*] on account of which there is a change in the reply to the question 'Where is it?' [*ubi?*] concerning a subject suppositing for the same thing earlier and later, as there is [in saying] that Socrates is earlier in the house and later in the marketplace. And thus also a change would be called 'relational' or 'positional' if on account of it a predicate from the category of relation or from the category of position would be changed, as [when it is said] that A is earlier equal or similar to B, and later it is unequal or dissimilar, or that Socrates earlier is standing and later is sitting, and so on for the other categories.

Only changes in substance, quality, quantity, and place are enumerated as changes here, however, for every change in any other category occurs on account of some change in one of these four, as is to be more thoroughly investigated in [connection with] bk. 5 of the *Physics*[105] or in [connection with] the *Metaphysics;*[106] there it is also to be considered whether in any and every one of those changes there is some thing that is produced in being or is expelled from being.

It should also be noted that every motion or change involves generation or destruction [*corruptio*], either absolutely or in some respect. For by growth, that which grows is generated with respect to *being greater,* i.e., it comes to be greater, whereas the same thing is destroyed with respect to *being lesser,* i.e., it

104. Buridan, *Quaestiones super octo Physicorum libros Aristotelis,* bk. 3, q. 6, f. 54rb. See *Sophismata,* chap. 7.

105. Aristotle, *Physics* V.1.225a1–4.

106. Aristotle, *Metaphysics* IX.6.1063a19.

ceases to be lesser, and by warming, that which gets warm is generated with respect to *being warm,* i.e., it comes to be warm, whereas the same thing is destroyed with respect to *being cold,* i.e., it stops being cold, it ceases to be cold; likewise, what is moving by local movement is destroyed here and is generated there, i.e., it ceases to be here and begins to be there. For 'to begin [to be]' and 'to cease [to be]' are called 'to be generated' and 'to be destroyed', for they are expounded by *not being earlier and being later* and conversely, just as are 'to be generated' and 'to be destroyed'. This is why Aristotle speaks in this manner in the book *On Generation and Corruption.*[107]

3.9.2 The contrariety of motion and rest

> The contrary of motion absolutely speaking is rest, and of motion in some species is rest in that species, so that the contrary of locomotion is rest in one place, and the contrary of change in quality is rest in that quality, etc. But motion is also contrary to motion, as are generation to destruction, growth to diminution, upward motion to downward motion, warming to cooling, etc.

The discussion of such contrarieties of motions pertains entirely to [the questions of] bk. 5 of the *Physics.*[108] Therefore I say nothing about them here, except that motion is said to be contrary to rest, that is to say, the term 'motion' [is contrary] to the term 'rest'. But this is not 'contrariety', strictly speaking, but rather 'privative opposition'. Still, the contrariety of motion to motion, or of terms that can be subjects of the term 'motion', is positive contrariety, yet never in the strictest sense, for the condition regarding 'maximal distance' is not met, since every motion from one terminus to another constitutes an intermediate between them.

107. Aristotle, *On Generation and Corruption* I.3.317a33ff.
108. Aristotle, *Physics* V.6, esp. 229b23–230a18.

3.10 Chapter 10: On 'prior', 'together', and 'to have'

3.10.1 The ways in which something is said to be prior

> One thing is said to be prior to another in many ways. In one way, with respect to time, because it exists or existed at an earlier time, and this is how something that is older is said to be prior. In the second way that thing is said to be prior from which the inference of subsistence cannot be reversed, for this is how we say that one [thing] is prior to two [things], on the ground that 'Two [things] exist' implies 'One [thing] exists', with the inference incapable of being reversed; it is in this sense that the genus is said to be prior to the species, for '[A] man exists' implies '[An] animal exists', but the consequence cannot be reversed from 'animal' to 'man'. In the third way something is said to be prior with respect to some order, namely, if something is marked as the first, whether absolutely or in some respect, then what is closer to it is said to be prior, and what is farther away is said to be posterior. In the fourth way something is said to be prior on account of dignity, because it is more powerful, or noble, etc. In the fifth way something is said to be prior to another because it either is or is said to be the cause of the other, whether the inference of existence can be reversed or not; it is in this way and in the second way that something is said to be prior by nature.

Since Aristotle in the chapter on relation in the *Categories*[109] spoke about togetherness by nature, and since also substance is prior to accidents and substantial terms to accidental terms, after the discussion of the categories Aristotle wanted to discuss briefly 'priority' and 'togetherness'. And since also 'to have' is used in many ways, and in accordance with these different ways it pertains to different categories, Aristotle also wanted to distinguish the various modes in which something is said 'to have' something. This is why the present tenth chapter is about 'priority', 'togetherness', and 'having'. Corresponding to these three, it contains three parts. But since this chapter does not altogether belong to logic, I intend to cover it briefly.

As regards the first mode of priority, therefore, it seems to pertain to the nature and condition of an absolutely successive being (and I assume time to be of this kind) that one part of it should be prior and another should be posterior. So then something which coexists with a prior time is called prior, and

109. Aristotle, *Categories* 7.7b15–8a12.

something else that does not coexist with that prior time but with a posterior time is called posterior.

As to the second mode, it is obvious that if A can exist without B and B cannot exist without A, then this is only because B depends for its existence on A as its cause of being, and not conversely. Whence it is clear that A is naturally prior to B. Consequently, in a manner similar to this mode, a significative term is said to be prior to another if it is possible to verify of this term the verb 'is' absolutely [*secundo adiacens*] while it is not true of the other term, but not conversely. Alternatively, [the first is prior to the second] if it is possible for things to be in the way as signified by the first proposition[110] while they are not in the way as signified by the other proposition, but not conversely, taking this whole phrase in the appropriate sense, as will be determined in the exercises of the *Sophismata* [in *Practica Sophismatum*].[111] For this is how [the term 'one' is prior to the term 'two', as Aristotle says, and][112] the term 'animal' [is prior] to the term 'man' or the term 'horse'.

The third mode is rather general, on the grounds that in any sort of order something is first, either absolutely or relatively to us, or on account of our willful assignment [*secundum nostram voluntariam signationem*], and that which in such an order is closer to this first is called prior. As in the case of numbers, one having been assigned to the first place, then two follows immediately, and so it is prior to three, and so forth; and since the king is the first in the [order of] power to rule the land [of France],[113] the queen is prior to the prince, and the prince is prior to the barons and the barons to the counts; and in a procession, assigning the bishop or the dean to the first place means that the seniors and those of higher rank would be said to be prior, but it would occur conversely if the one carrying the cross were assigned to the first place, for then the juniors and those of lesser ranks would be called prior.

The fourth and the fifth modes are quite obvious. Therefore we should [simply] realize that those modes are not so distinct as not to be able to suppposit for the same [things], but they are nevertheless predicated according to diverse concepts, as has been obvious.

110. The first proposition is the one formed with the first term, e.g., 'A is', if the first term is A.

111. *Sophismata,* chap. 2, Fourteenth conclusion.

112. This is omitted in the critical text but present in the apparatus and in the Hubien text.

113. Most mss. omit this bracketed addition, but it occurs in the critical text.

3.10.2 The ways in which things are said to be together

> Things are said to be together in many ways. First, in time, as when neither [of two things] is or was prior to the other in time, as in the case of things which are such that the generation of one does not precede the generation of the other. Second, this is because they are convertible in inferences of existence and neither is the cause of the other, as are correlative terms; and these are all said to be together by nature. In the third way species also are said to be naturally together into which a genus is primarily divided, or, conversely, which immediately split up a genus among themselves. And in bk. 5 of the *Physics*[114] another way is also distinguished, namely, that of things' being together in a place, because they are in the same proper place, or even sometimes because there is no intervening space [*medium*] between them, as in the case of things that touch each other.

It seems to me that this part is so clear that there is no use in spending time on a lengthy exposition. Therefore I only say that wherever something prior and something posterior can be found, some things can be said to be together, but privatively, in the manner described by Aristotle in bk. 10 of the *Metaphysics,*[115] when he says that 'equal' is opposed privatively to 'greater' and 'lesser'.

3.10.3 The ways in which something is said to have something

> To have something is also said in many ways, as Aristotle asserts at the end of the *Categories* and in bk. 5 of the *Metaphysics:*[116] in one way, [it means] to have an inherent quality, as a man has knowledge, or health, or warmth; in another way, to have quantity, as two cubits, three cubits, or [some] magnitude; in the third way, to have some external habit, either on the whole body or on some part, as to have clothes, or a ring on the finger; in the fourth way, to have some member or some part of it, as when

114. Aristotle, *Physics* V.3.226b2.

115. Aristotle, *Metaphysics* X.5.1055b32.

116. Aristotle, *Categories* 15.15b18–35; Aristotle, *Metaphysics* V.20.1022b4–14.

a man has hands and feet; in the fifth way, as a vessel is said to have that which is in it, as when a barrel [is said] to have wine [in it]; in the sixth way, to have some possession, as when a man is said to have some land or a house; in the seventh way as when a man is said to have a wife and a wife to have a husband. And in bk. 5 of the *Metaphysics*[117] a further principal mode is distinguished, namely, to rule something by nature or by power, as when a tyrant [is said to have] a city.

It was said in chapter seven that the first of these ways pertains to the category of quality, for it signifies nothing else but to be of some quality, and similarly the second way pertains to the category of quantity, and the third way to the category of habit. And the last way, taken from bk. 5 of the *Metaphysics*,[118] is founded on the power to change or prohibit the actions of others, and thus it pertains to the category of action. But the seventh way is predicated in the category of relation, as was said in chapter seven. The sixth way is reduced to the eighth, for a possessor is one who can manage and change his possessions as he wants; and the same applies to the fifth way, for a vessel is something that prohibits its contents from flowing and moving out; yet again, the same applies to the fourth way, for the parts are moved according to the motion of the whole, or perhaps we say that the whole has parts, and conversely, relatively, in which case it pertains to the category of relation.

117. Aristotle, *Metaphysics* V.20.1022b4–14.

118. Ibid.

Treatise 4
On suppositions

4.1 Chapter 1: The difference between signification and supposition

4.1.1 The aim of the chapter

> The following treatise deals with supposition and some related matters. First we shall state the difference between signification and supposition. And I do not intend to speak about utterances signifying naturally, for from such utterances we do not form propositions, but I only intend to speak about the conventional [*ad placitum*] signification of utterances. Nor do I intend in this chapter to speak about material supposition, for in this way every articulate utterance can supposit, even if it is not imposed to signify something. For the present, I only intend to speak about supposition inasmuch as an utterance can or cannot supposit in accordance with the signification imposed on it.

Since supposition belongs not to a proposition but to a term that can be the subject or the predicate of a proposition, the fourth treatise, dealing with supposition and some related matters, has to follow the treatise on predicamental terms. This treatise will contain six chapters. The first will deal with the differences among signification, supposition, verification, and appellation. The second will be about several divisions of utterances signifying by convention, in order to clarify which of them can and which of them cannot supposit. The third will be about the general modes and divisions of supposition. The fourth will deal in particular with the supposition of relative terms [i.e., pronouns]. The fifth will be about appellation, and the sixth will deal with ampliation and restriction.

The first chapter contains four parts. The first sets forth the aim [of the chapter]; the second states the difference between signification and supposition; the third [shows] the difference between supposition and verification; and the fourth [shows] the difference between supposition and appellation.

The first part is clear enough: it puts forward the aim of the treatise in brief, namely, that it is about supposition and some related matters, such as signification, verification, appellation, ampliation, and restriction. It also says that in this chapter we shall have to deal immediately with the difference between signification and supposition. Also, it states what kind of signification is to be dealt with in this chapter and what kind is not, and similarly, what kind of supposition is to be dealt with and what kind is not. And all these [points] are obvious in the text.

But it is also to be heeded that we do not deal here with supposition as

it is understood by the grammarian, [namely,] as supplying the subject for a verb. For in this way the term 'chimera' could just as well supposit as the term 'man', since the expression [*oratio*] 'A chimera runs' is just as well-formed [*congrua*] as 'A man reads', and it is not in this way that, as logicians, we intend to take supposition. Again, if I say 'A man is an animal', the term 'animal' supposits just as well as does the term 'man', which is not the case with supposition as the grammarian interprets it.

4.1.2 The difference between signification and supposition

(1) Therefore, taking signification and supposition in this way, signification differs from supposition. For any word [*dictio*] that is a part of a proposition not taken materially signifies and gives rise to some concept in the person hearing it according to the signification conventionally [*ad placitum*] given to it.[1] (2) But not every such word has supposition, for only such a term is apt to supposit that, when something is pointed out by the pronoun 'this', or when some things are pointed out by the pronoun 'these', can truly be affirmed of that pronoun. Therefore the term 'chimera' cannot supposit, for whatever is pointed out, it is false to say 'This is a chimera', and whichever things are pointed out, it is false to say 'These are a chimera'.

This part contains two sections, one about signification and the other about supposition. As regards the first we should note that the capability of speaking was given to us in order that we could signify our concepts to others and also the capacity for hearing was given to us in order that the concepts of speakers could be signified to us. This is what Aristotle says at the end of the *On the Soul*:[2] "for an animal has hearing in order that something be signified to

1. 'Cuiuslibet dictionis quae non materialiter sumpta est pars propositionis interest significare et audienti eam conceptum aliquem constituere secundum institutionem ad placitum sibi datam'. Notice how the traditional definition of signification, or 'to signify' *(significare),* namely, 'to give rise to some understanding or concept of the thing in the soul or mind of the hearer' *(intellectum/conceptum rei constituere in animo/mente audientis),* is embedded in this remark. See Aristotle, *On Interpretation* 1.6b21–22.

2. Aristotle, *On the Soul* III.13.435b24–26.

it; and it has a tongue, so it can signify something to another," and by "tongue" he means the power to form sounds, whatever that may be. And so it is clear that a meaningful utterance should signify the concept of the speaker to the hearer and should give rise to a concept in the hearer similar to the concept of the speaker, unless it is uttered in vain, or for deception, or perhaps only for the sake of the self-amusement that is [found] in hearing oneself, as in the case of someone singing to herself, or for another such reason. Nevertheless, it is clear that all who speak and dispute intend that their words should accomplish the aforesaid two things. We should also know that naturally significant utterances are not used to form propositions, for they are naturally able to make perfect sense by themselves, without forming a proposition, for the appropriate hearer. But neither does an utterance that is called 'meaningless' enter into a proposition, namely, the kind of utterance that neither naturally nor by a conventional imposition signifies something, except, perhaps, itself, or its own concept, e.g., 'bu ba'. For such an utterance is neither a noun, nor a verb, nor a syncategorematic term, so it would have no function in a proposition, unless it is taken materially. If I say: 'baf runs', this is not a proposition, for the utterance 'baf' does not have a signification, nor a mode of signifying according to which it could provide the subject to a verb [*reddere suppositum verbo*]; but if it were taken materially, it would be a false proposition equivalent to "The utterance 'baf' runs."

The second section, which is about supposition, appears to me to be quite clear, except that one might indeed wonder because, although the term 'God' can supposit, nevertheless, whatever is pointed out by the pronoun 'this', [the term] is not verified of this pronoun, for this would require pointing out God, whom we cannot point out. Some respond that even if God cannot be pointed out to the senses, He can be pointed out to the intellect. Alternatively, we can say that for a term to be able to supposit it suffices that it can be verified of such a pronoun or of a relative [pronoun] referring back to some prior term. For example, we truly say: 'the first cause exists and it is God', or even 'the almighty is not evil and He is God'. But this is not so with 'chimera', for even if we said 'a chimera is not, and she is a chimera', the proposition 'she is a chimera' is false, so that such a relative pronoun can be taken in place of a demonstrative pronoun in this case.

4.1.3 The difference between verification and supposition

(1) Verification is different from supposition, for verification properly speaking pertains to a proposition and not to a term, but supposition pertains to a term and not to a proposition. (2) Again, it is possible that terms have supposition in a proposition without the verification of the proposition, in affirmatives as well as in negatives, as in 'A man is a donkey' or 'A man is not an animal'. (3) Furthermore, there can be verification without supposition in negatives, as in 'A chimera is not a goat-stag'. But in the case of true affirmatives it is necessary that the proposition be verified of some thing or of some things for which its terms supposit. (4) And if a term is distributed, then verification should be for all the things for which the term supposits, if the proposition is to be true; and if there is no distributed term, then [verification] suffices for some thing or for some things.

In the third part there are four sections. The first states that verification pertains to propositions and not to terms, because to be true or false is an exclusive characteristic [*propria passio*] of propositions. For every proposition is either true or false and everything that is true or false is a proposition, given the logicians' use of the terms 'true' and 'false'. This is how this point is usually put, and it is true if we are speaking about mental propositions and of the true and the false taken primarily, and not by attribution to something insofar as it is true or false.[3] For every mental proposition is true or false and everything that is true or false in a similar manner is a mental proposition, according as the logician speaks about true and false. For if a spoken proposition is true, this is so only insofar as it signifies a true mental proposition of the speaker or else gives rise to a true mental proposition in the mind of

3. As will be clear from what follows, Buridan is applying here the medieval Aristotelian doctrine of *analogy by attribution* to what he takes to be the logicians' proper usage of the terms 'true' and 'false'. The basis of this type of analogy in general is that if a term T is properly predicable of a (kind of) thing A, then T can be predicated in an analogous, secondary sense also of another (kind of) thing B that is somehow related to A. In such a case B is said to be T (in the secondary, analogous sense), by attribution to A, i.e., on account of its relation to A insofar as A falls under T (in the primary, strict sense of T). The standard example to elucidate this type of analogy was the predication of 'healthy' in the primary sense of animals, and in a secondary sense, by attribution, of food, since it causes an animal to be healthy. (Of course, food, normally, is healthy *only* in this secondary sense; otherwise, e.g., if I remarked that the food on your plate is very healthy, intending this in the primary sense, I could be indicating that whatever you are about to eat is still alive and kicking!)

the hearer. And this is by attribution, just as when urine is said to be healthy only because it signifies the health of the animal, or when food is said to be healthy because it brings about the health of the animal.

But it seems to me that we should note about spoken propositions, which are said to be true or false significatively only because they represent true or false mental propositions, that every spoken proposition is true or false. For nothing is a spoken proposition unless it represents a mental proposition, and every mental proposition is true or false; so every spoken proposition represents something true or false. Therefore, every spoken proposition is representatively or significatively true or false.

On the other hand, I hold that not every utterance that is significatively true or false is a spoken proposition, for we have obvious counterinstances with such impersonal words [*dictio*] as 'it is read' [*legitur*], '[someone] is loved' [*amatur*], 'it is thundering' [*tonat*], 'it is raining' [*pluit*], 'it is snowing' [*ninguit*], and 'it is hailing' [*grandinat*], each of which represents something true or false, but none of which is a proposition. This is because every proposition has to have a subject and predicate as its principal parts, and this is not the case here. It is also because every proposition is an expression [*oratio*] (for a proposition, meaning a spoken proposition, is described as an expression that signifies something true or false); but none of the above-quoted sets of words is an expression, for they do not satisfy the definition of an expression, namely, that [it is something] whose parts are significative separately.[4] So such spoken words are true or false significatively, for they represent true or false mental propositions, but they are not propositions, nor are they expressions, for they are not composed of several utterances signifying separately, which is required for something to be called a proposition or an expression, and this over and above [the requirement] that a mental proposition correspond to it.

Indeed, people engaged in argument can agree that they will understand nothing more and nothing else by the utterance 'A' than is understood by the conventional signification of the utterance 'A man runs'. And then it follows that if it is true to say 'A man runs', then it is true to say 'A'. Still, the utterance 'A' is neither an expression nor a proposition, for it does not have separately meaningful parts.

Therefore, when it was said in the first section that verification belongs to propositions and not to terms, this was to be understood as relating to mental propositions. And if we want to interpret this in relation to spoken propositions, then 'verification does not belong to terms' amounts to 'no term is true or false', taking 'term' for something that taken significatively can be the

4. This is Aristotle's definition of 'expression' *(oratio).* See Aristotle, *On Interpretation* I.4.16b27–29.

subject or predicate of a proposition. But if we interpreted 'term' for a word equivalent to a proposition, then such a term could be said to be true or false significatively, just like a spoken proposition. Also, when it was said in the same first section that supposition belongs to terms and not to propositions, this is true of propositions taken significatively but not of propositions taken materially, and of terms insofar as a term is said to be the subject or the predicate of a proposition.

4.1.4 The difference between appellation and supposition

> (1) Appellation differs from supposition, for there are terms which supposit and do not appellate, for example, terms in the nominative case in the category of substance, such as 'animal', 'plant', 'gold'; (2) and there are terms that appellate and do not supposit, for example, 'chimera', 'vacuum', or the whole [phrase] 'man able to neigh'; (3) and there are terms that appellate and supposit, such as 'white', 'father', 'sitting', or the whole [phrase] 'white man', which appellates one thing and supposits for another, for example, 'white' [*album*] supposits for the thing that is white and appellates whiteness. (4) For every term that supposits for something and signifies something else for which it does not supposit appellates everything it signifies other than that for which it supposits as pertaining [*adiacens*] to that for which it supposits.[5]

Obviously, this part contains four sections. The first is about terms that supposit and do not appellate, for they are terms in the nominative case in the category of substance; and this is so because they do not connote some extrinsic [*aliena*] disposition along with the substance that they signify and for which they supposit. Indeed, the same holds also for many abstract terms in the category of quality, such as 'whiteness', 'hotness', and 'humidity'.

But doubts may arise concerning terms in oblique cases[6] in the category of

5. This rather complicated rule will be fully explained in the text below. In any case, a preliminary explication may also be helpful at this point. This is a rule that concerns terms which signify things that they supposit for as well as other things that they do not supposit for. These terms are said to appellate the latter as adjacent to the former.

6. 'Oblique cases' are all the cases other than the nominative case of the declension of a Latin noun or nounlike, declinable word (adjective, participle, pronoun, etc.). Accordingly,

substance, namely, whether they supposit or appellate. And I assert that properly speaking they never supposit; for no term supposits, properly speaking, unless it is the subject or the predicate of a proposition, and an oblique term cannot be the subject or the predicate of a proposition, as I assume. Whence it is obvious that of whatever is pointed out, it is not true to say 'This is of a stone', except in the sense: 'This is a part of a stone' (or something similar), but then it is not 'of a stone' that supposits, but the whole [phrase] 'part of a stone'. Therefore an oblique term cannot by itself be the subject or the predicate of a proposition, whence it is obvious that it does not supposit. Nevertheless, I say that an oblique term properly appellates. For if I say: 'Socrates' donkey runs', the whole [phrase] 'Socrates' donkey' supposits for a donkey, and not for anything other than a donkey, but the term 'Socrates" signifies something other than a donkey; therefore the term 'Socrates" appellates Socrates as pertaining to [*adiacentem*] a donkey, i.e., as its owner, though not as something inhering in it. But you will also ask whether in saying 'A rational animal runs' there is any appellation in the subject. And I say that there is not, supposing that 'animal' is truly a term in the category of substance and 'rational' is truly a specific difference of 'animal' not connoting any accident, but here there is only a restriction of supposition, without the appellation of some extrinsic [*aliena*] disposition. And the same would be the case in saying 'The animal man runs', or saying 'An animal that is a man runs', or even saying 'An animal that is not a man runs', for it appears that to speak negatively in this way is nothing but to except or to remove man from the supposition of the term 'animal'. And if anyone wants to call this appellation, he is welcome. But a substantial term in the nominative case taken in itself properly supposits and appellates nothing.

The second section is about terms that appellate and do not supposit, such as 'chimera', 'vacuum', and 'man able to neigh'. This is obvious, because whatever is pointed out, it is not true to say of it 'This is a chimera', or 'This is vacuum' or 'This is a man able to neigh'. But in the proposition 'A man able to neigh runs' the phrase[7] [*dictio*] 'able to neigh' [*hinnibilis*] appellates the capability to neigh, not as belonging to that for which the whole subject supposits, but as belonging to that for which the other part, namely, 'man' would supposit, if it were taken in itself; and since this appellatum cannot pertain [*adiacere*] to a man, the phrase 'able to neigh' not only contracts the supposition of

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an 'oblique name' or 'term' in Buridan's usage is any noun or nounlike word or phrase in an oblique, i.e., non-nominative case.

7. In Buridan's terminology *dictio* is a noncomplex meaningful utterance, i.e., a word, whereas *oratio* is a complex utterance, i.e., an expression. I use the neutral 'phrase' in the translation to cover both categories when there is a discrepancy between Latin and English syntax, as in this case.

'man' but removes it altogether. The same is the case with the term 'vacuum', which is obvious, if instead of the term we take its nominal definition, namely, 'place not filled with body'. For the term 'place', if it were taken on its own in a proposition, would indeed supposit, but because of the appellations of the terms added to it its supposition is removed. And the same would be obvious about 'chimera', if we gave its nominal definition.

The third section is about terms that supposit and appellate. For it is clear that 'white' [*album*] supposits for a substance and appellates the whiteness as inherent in that substance.

The fourth section is a rule that is already clear enough from what has been said. But we should add that where the subject of the proposition would supposit for nothing, as is the case with those mentioned in the second section, there would still be appellation in the way described in the second section.

4.2 Chapter 2: Divisions of utterances signifying by convention

4.2.1 The division of utterances signifying by convention into complex and incomplex utterances

(1) Now we have to consider which words or expressions can supposit and which cannot. And to see this, we have to put forward some classifications of utterances that signify by convention, since [in this discussion] we are not concerned with any others than these. (2) Thus the first division is that according to which some [utterances] are incomplex, and are called words, while others are complex, and are called expressions.

The second chapter deals with a number of classifications of significative utterances and contains six parts, corresponding to the six divisions put forward in it. The first part contains two sections, the first of which sets out the aim of the chapter and is clear in itself. The second section classifies significative utterances as either complex or incomplex, and this section is also clear enough, apart from doubts that one may have concerning examples such as 'it is raining' [*pluit*], 'it is thundering' [*tonat*], 'one is loved' [*amatur*], (insofar

as *amatur* [one is loved] is taken as an impersonal verb). These doubts have, however, been discussed in the preceding chapter.[8]

4.2.2 The division of incomplex utterances signifying by convention with respect to subjection and predication

(1) The second division is that of incomplex utterances taken in themselves: some can be the subject or the predicate of a proposition, e.g., 'man', 'stone', 'white' [*album*]; (2) others can be neither the subject nor the predicate, e.g., 'not', 'therefore', 'as'; (3) and still others can be predicated but cannot be the subject, e.g., 'any', 'every', 'nobody', 'nothing', and perhaps 'white' [*albus*] and 'black' [*niger*];[9] (4) but none can be the subject unless it can be the predicate.

This division brings in three members and eliminates a fourth. Now clearly the first two members are obvious enough. But the third member and the fourth are more questionable, for how does it come about that everything that can be a subject can be a predicate, and yet the converse does not hold?

To this we may reply by noting in the first place that throughout this part

8. *Pluit, tonat, amatur, scilicet prout amatur est verbum impersonale; sed de hac dubitatione dictum est in praecedenti capitulo.* Buridan's point here is that despite the apparent syntactic simplicity of such impersonal constructions in Latin, these simple utterances express complete mental propositions, having subject, predicate, and copula. See 1.3. In English, on the other hand, these impersonal constructions are expressed by complete sentences. So they do not appear to be simple even on the level of spoken or written language.

9. In Latin, an adjective in the neuter gender may function as a noun *(adiectivum substantivatum in neutro genere),* and so it can be the subject or the predicate of a proposition in itself. For example, *album est coloratum* ('a white [thing] is a colored [thing]') is a grammatical Latin sentence. Adjectives in the feminine or masculine genders, however, in Buridan's view can never be subjects in themselves. So *'Albus est coloratus' (*'A white is a colored', where the asterisk indicates ungrammaticality) for him is simply ungrammatical. Buridan will give what he regards as semantic reasons for his view later (and will also consider the questions whether and why such adjectives can be predicates in themselves). Sometimes adjectives are made into substantives also in English, although this is not tied to (or marked by) gender as in Latin.

we do not intend to deal with the subjection or predication of utterances taken materially, but only insofar as they are taken significatively.[10]

And so, first, as far as the adjectives that are not substantivated ([by being put] in the neuter gender) are concerned, I assert that according to the grammarian they cannot provide a suppositum for a verb, and so they cannot be the subjects of propositions either, for lack of grammaticality. But if the verb already has a suppositum, adjectives can be adjoined for designating what pertains [*adiacet*] to the subject or to what the subject supposits for. It is true, nevertheless, that an adjective substantivated [by being put] in the neuter gender can be a subject, for it is resolved into an adjective and a substantive, e.g., 'white' [*album*] means the same as 'white thing'.

Terms such as 'any', 'every', 'nobody', 'nothing' and their like raise more difficulties, however. Still, as regards 'nobody' and 'nothing', we should hold that a negation following the copula of a proposition cannot constitute a negating [i.e., propositional] negation, but only an infinitizing [i.e., term-]negation, which infinitizes the term to which it is prefixed.[11] Hence the proposition 'A stone is no man' is affirmative with an infinite predicate term and is equivalent to 'A stone is a non-man'; for an infinitizing negation is quite correctly [taken to be] a part of the subject or of the predicate term. On the other hand, a negation that precedes the copula can be a negating negation, if it is understood to cover the copula, and then it is construed with the copula. And in that case it is taken to be a part neither of the subject, nor of the predicate, but rather a part of the copula. Now the negations implicit in the terms 'nothing', 'nobody', 'never', and the like, are imposed to negate, if they are placed at the beginning of the proposition, where a negating negation can occur. Therefore, if I say 'Nobody is a stone', this proposition is negative, and the subject is the term 'man', implied in the word 'nobody'.[12]

10. That is, taken as referring to what they were imposed to signify ultimately and not to themselves or to their concepts.

11. To use a modern example, the intended contrast is between (1) 'The present king of France is not bald' (which is true when it is not the case that the present king of France is bald, for whatever reason, say, because France presently has no king, whence the proposition is actually true) (negating negation), and (2) 'The present king of France is not-bald' (which is true when the present king of France is a non-bald person, i.e., has hair, whence the proposition is actually false) (infinitizing negation). The regimented Latin syntax of medieval logic could systematically express this distinction by placing the negation either before (negating negation) or after (infinitizing negation) the copula, yielding (1) *'Praesens Rex Franciae non est calvus'* and (2) *'Praesens Rex Franciae est non calvus'.*

12. As is clear from this passage, the distinction between the two types of negation holds also for the negations implied in other syncategorematic terms, such as 'nothing' (to be ana-

But as regards the affirmative signs such as 'every' or 'any', why cannot these be as correctly parts of subject terms as they are of predicate terms? One can say that a distributive sign placed on the side of the predicate[13] does not influence the copula or the subject, and so it is held to operate entirely on the predicate term. But when it is placed on the side of the subject, it influences the copula and the predicate as well, by producing confused supposition, although not distributive [confused supposition in the predicate], and so it is taken to be neither a part of the subject, nor of the predicate, but a modification [*condicio*] of the whole proposition.

But then the particular sign ['some'] appears to be more problematic. For if it is placed on the side of the subject, neither the copula nor the predicate is operated on. Hence it would appear that it might as well be accounted part of the subject, even as it would be part of the predicate, were it to be placed on the side of the predicate.

There can be various responses to this. The first is that the particular sign occurs in a proposition completely vacuously, be it on the side of the subject or on the side of the predicate, provided that one grants the rule that indefinite and particular propositions are formally equivalent. For under these circumstances nothing at all is changed in [the import of] the whole by the addition or the deletion of the sign. So it should not be thought of as a part of the subject or of the predicate nor as a modification [*condicio*] of the whole proposition, apart from its being added vacuously.

But now I show that even if it is placed on the side of the predicate, it is not a part of the predicate. For the following two propositions are formally equivalent, namely, 'B is A' and 'B is some A', so whatever contradicts one also contradicts the other. Now it is clear that 'No B is A' contradicts the first, so it also contradicts the second. But it would not contradict it if 'some' were part of the predicate, since then they would not have the same subject and predi-

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lyzed as 'no thing'). Accordingly, 'Cerberus is nothing' (infinitizing negation) is false (despite the fact that Cerberus is not any thing [negating negation], i.e., it is not the case that Cerberus is a thing, since Cerberus does not exist), for the proposition is equivalent to 'Cerberus is a non-thing' (infinitizing negation), which would require for its truth the existence of Cerberus. On the other hand, 'Nothing is Cerberus' (negating negation) is true, because it is not the case that some thing is Cerberus.

13. *A parte praedicati.* Since Buridan's main concern in this passage is to spell out the relation between the location of the signs of quantity on either side of the copula and their role in the construction, namely, whether they are to be regarded as term-forming or as proposition-forming functors, in the translation the phrases 'on the side of the predicate or subject' should be understood as referring to the location of the signs of quantity on the two sides of the copula.

cate, which is required for formal contradiction. So it appears to me that this word, whether placed on the side of the subject or on the side of the predicate, should not be said to be a part of the subject or of the predicate; or if it is taken to be a part of the predicate, it should likewise be taken as a part of the subject, but as a part occurring there vacuously, for by its removal nothing is changed in [the import of] the whole.

But in another way the particular sign—or even the universal sign as well—sometimes occurs in a proposition so as to make an indefinite proposition determinate. Thus the universal sign is used to indicate that the predicate is verified of the subject for all its supposita, and the particular sign is used to indicate that the predicate is true for some but not for all, or at least that its truth is known for some but not for all, whereas the indefinite proposition is indeterminate in this regard. So in this way, taking the particular sign strictly, the [logical] laws correctly differentiate between a particular and an indefinite proposition. Indeed, by an indefinite proposition [people] quite often mean a universal and not a particular proposition. And in this way the universal and particular signs, even when they are placed on the side of the subject, are not attached to the subject, but they do designate the quantity of the proposition.

4.2.3 The division of incomplex utterances signifying by convention into categorematic, syncategorematic, and mixed utterances

(1) Again, some incomplex utterances are categorematic, some are syncategorematic, and some are intermediate or mixed. (2) The purely syncategorematic ones are so called because they signify nothing besides the concepts they immediately signify, except, perhaps, the things that the terms to which they are attached signify, as in the cases of the words 'not', 'and', 'or', 'therefore', and the like. (3) The purely categorematic ones are so called because they do not signify only their concepts, which they immediately signify, but also the things conceived by these concepts, and can be subjects or predicates in themselves, and do not include any purely syncategorematic term, e.g., 'man', 'stone', 'whiteness', 'white', and the like. (4) The intermediate or mixed ones, however, are so called either because besides the concepts that they immediately signify they also signify the things conceived by these concepts, but cannot be subjects or predicates in themselves, or because they imply categore-

matic and syncategorematic terms as well, e.g., 'today', 'somewhere', 'nobody', 'nothing', 'with itself' [*secum*],[14] and many others.

The third part contains four sections. The first provides a threefold division that is made manifest by the other sections. The other three sections clarify the three members of this division, respectively. These may in their turn be clarified by noting that a term is said to be categorematic either with reference to predication or with reference to signification.[15] If it is so called with reference to predication, then every word is said to be purely categorematic if it can be either a subject or a predicate in itself and does not imply any syncategorematic term; for there are many words that can be predicates but that are not purely categorematic, since they include negations, as do 'nobody', 'nothing', and privative terms. But if a term is called categorematic with reference to signification, then terms are called categorematic as being significative in themselves, and syncategorematic as being significative not in themselves but with something else; for ['syncategorematic'] derives from 'syn' in Greek, which is the same as 'cum' [with] in Latin, [and so, 'syncategorematic' is interpreted] as 'significative with something else'.

It should, however, be realized that any word that can figure in a proposition is in itself imposed to signify something, namely, to signify a concept of the mind, in accordance with what was said at the beginning of the present book and even as Aristotle asserts in his *On Interpretation,* namely, that 'Those [things] that are uttered are marks of the affections [*passiones*] of the soul',[16] i.e., signs [of concepts]. So, as far as this kind of signification is concerned, no distinction arises, since every utterance that can be put in a proposition has its own signification imposed on it by convention.

But further, some words are imposed to signify in themselves, and beyond these concepts, the things that are conceived by these concepts; thus the term 'donkey' signifies donkeys, the term 'white' whiteness, and the terms 'today' or 'tomorrow' some time. Words such as these are called purely categorematic if they can be predicates in themselves and imply no syncategorematic term; they are called intermediate or mixed, however, if they cannot be predicates in themselves or imply some syncategorematic term.

There are, though, some significative words that besides their concepts do

14. Note here that *secum* is incomplex in Latin, although its equivalent, 'with itself', is not incomplex in English.

15. Buridan here alludes to the etymology of the term 'categorematic', deriving from the Greek *kategorein,* meaning both 'to signify' and 'to predicate'. For a detailed discussion of this etymology see G. Nuchelmans, *Late-Scholastic and Humanist Theories of the Proposition* (Amsterdam: North Holland, 1980), pp. 45–74, 89–90, 124.

16. Aristotle, *On Interpretation* I.1.16a4–5.

not signify in themselves things conceived by these concepts, e.g., copulas, negations, and distributive signs. Hence the propositions 'God is God' and 'God is not God' do not signify outside the mind anything other than, or anything more or less than, what the term 'God' signifies, provided that 'is' is taken strictly as a copula, as will be explained later.[17] Nor does the expression 'every man is an animal' signify anything more or less or something other than the concepts of the soul than does 'no man is an animal'. So signs [of quantity] signify only how the spoken and the corresponding mental terms supposit, and nothing over and above this. Further, the copulas 'is' and 'is not' signify different ways of combining mental terms in order to form mental propositions, and these different ways [of combining] are in their turn complexive concepts pertaining to the second operation of the intellect, insofar as this goes beyond the first operation.[18] And so also the words 'and', 'or', 'if', 'therefore', and the like designate complexive concepts that combine several propositions or terms at once in the mind, but nothing further outside the mind. These words are called purely syncategorematic, because they signify nothing outside the mind, except along with others, in the sense that the whole complex consisting of categorematic and syncategorematic words does signify the things conceived outside the mind, but this is on account of the categorematic words.

4.2.4 The division of incomplex utterances signifying by convention with respect to the incomplex or complex concepts corresponding to them

Furthermore, to some incomplex utterances there correspond complex concepts, and to others incomplex concepts. Those to which there correspond complex concepts can, and should, be expounded as to their

17. Buridan here refers to the temporal connotation of copulas, by which something outside the mind is indicated, namely, some (past, present, or future) time. In law-like statements, however, in which the terms have natural supposition, we can abstract from this temporal connotation and form a purely complexive concept of the copula that besides having the function of combining the concepts of the subject and the predicate into a mental sentence represents nothing outside the mind. See 4.3.4.

18. By the first operation the soul forms simple concepts. By the second operation the soul combines the concepts formed by the first operation into complex ones by means of complexive concepts.

> meaning [*quid nominis*][19] by complex expressions that are equivalent to them in signification. Those, however, to which there correspond incomplex concepts do not have definitions precisely expressing their meaning.

Note that some words to which there correspond incomplex concepts are categorematic and some are syncategorematic. For I take it that the concepts corresponding to the syncategorematic words 'and', 'or', and 'if', although they are complexive of several propositions or terms, they are, nevertheless, not complex, consisting of several others, but simple. The same goes for the concept of the verb 'is', insofar as it is taken precisely as a copula. It is hence in this way a purely syncategorematic word, although, perhaps, insofar as it may connote a determinate time, it will then abandon its simplicity and will not be purely syncategorematic either, as will be explained later.

Still, it remains true that there are some syncategorematic words to which there correspond complex concepts: examples are 'only', 'alone', 'insofar as',[20] and the syncategoremata implicit in 'begins' and 'ceases', and other like cases. It follows that the propositions in which these occur should be analyzed in terms of several propositions. For instance, 'Only a man runs' is analyzed as 'A man runs and nothing other than a man runs', from which it is obvious that the word 'only' implies in its corresponding concept an affirmative and a negative copula and distribution [operating] on the negative one.

Again, some categorematic terms have simple concepts corresponding to them, as do 'man', 'whiteness', or even 'white' [*album*],[21] whereas others have

19. Note that strictly speaking, despite existing translational traditions to the contrary, *quid nominis* is not to be rendered as 'nominal definition', for the latter is *definitio exprimens quid nominis,* i.e., 'definition expressing the *quid nominis*'; therefore, since the phrase *quid nominis* alone is usually expounded as *quid significatur per nomen,* i.e., what is signified by the name, *quid nominis* may justifiably be rendered as 'the meaning of the name'. Accordingly, Buridan's point is that significative utterances subordinated to simple concepts do not have nominal definitions, i.e., definitions precisely expressing their *quid nominis,* but of course they do have *quid nominis,* i.e., they do have meaning or signification, given that they are meaningful by virtue of being subordinated to a concept in the first place. Nevertheless, for the sake of simplicity, in its subsequent occurrences I will translate the whole phrase *definitio exprimens quid nominis* not as 'definition expressing the meaning of the name' but simply as 'nominal definition'. Furthermore, since Buridan himself occasionally uses the shorter phrase *quid nominis* to refer to a nominal definition, on such occasions I will also translate *quid nominis* as 'nominal definition'.

20. The critical text here has *secundum quid,* which would be 'in some respect', instead of the Hubien text's *secundum quod,* which is the expression for reduplication, as translated.

21. *Album* in the text here is to be taken as a nonsubstantivated adjective, for otherwise it has a nominal definition, *res alba,* and hence a complex concept corresponding to it. See 8.2.3.

complex concepts, as do 'chimera' or 'vacuum'. For the term 'vacuum' signifies the same as, and nothing more or less than, the expression 'place not filled with body'. Indeed, as we impose names to signify by convention [*ad placitum*], we can impose an equivalent word on any expression, so that we shall [for example] understand equivalently by the word 'A' as we do by the proposition 'A man runs', and then it is clear that to the word 'A' there corresponds a complex concept.

4.2.5 The division of complex utterances signifying by convention into complete and incomplete

Of complex utterances, called 'expressions' [*oratio*], some are complete, and some are incomplete. Some complete expressions are propositions, e.g., 'A man runs', and some are not, e.g., 'Peter, light a fire!', as was asserted in the first treatise.[22] Some incomplete expressions are constructed from a verb with some determination [but] without a name in the nominative case that would provide the subject of the verb, e.g., 'runs fast', 'sees a man'; others are made up from a substantival categorematic name[23] in the nominative case with something else added as a determination, e.g., 'white man', 'Robert's donkey', or 'a horse that is walking'; others are made up from several substantives joined by some connective [*coniunctio*], as are 'man and horse' or 'horse or donkey'; and still others are composed solely from a categorematic and a syncategorematic term, as are 'non-man', 'no man', 'every man', 'only Socrates'.

All the points made in this part are self-evident. Now, all these classifications of significative utterances were put forward here in order to discuss which of them can supposit and which of them cannot. And since no utterance can supposit properly speaking unless it can be a subject or a predicate in its own right, we shall have to see which of the above can be subjects or predicates and which cannot. And though in this section I have posited only four classes of incomplete expressions, I do not thereby intend to rule out the possibility of many other constructions also involving incomplete expressions. I posited these four as those which should be considered more [thoroughly] in

22. See 1.2.3.

23. 'Substantival name' translates *nomen substantivum,* as opposed to 'adjectival name', *nomen adiectivum.*

this discussion, however, for when these have been examined, it will be easy to look at the rest.

4.2.6 The division of utterances into those that can and those that cannot be subjects and predicates, and into those that can and those that cannot supposit

(0) Now we have to distinguish between utterances that can be subjects or predicates and those that cannot, and also between those that can supposit and those that cannot; further, some rules should be laid down in this connection.[24] (1) The first, as was mentioned above, is that any term that can supposit [*possibilis supponere*] can be a subject or a predicate in a categorical proposition, but not conversely. (2) The second rule is that no purely syncategorematic term can in itself be a subject or a predicate. (3) The third rule is that no oblique name can in itself be a subject or a predicate. (4) The fourth rule is that no verb can be a subject or a predicate, except for infinitives, which can correctly be [used as] subjects or predicates, as in 'To cut is to act'. (5) The fifth rule is that every substantival name in the nominative case, or even an adjective substantivated in the neuter gender [and standing] in the nominative case, can be a subject or a predicate; though concerning nonsubstantivated adjectives there is much disagreement among the professors. (6) The sixth rule is that no complete expression can be a subject or a predicate. (7) The seventh rule is that no expression that is incomplete in the first way [distinguished above] can be a subject or a predicate, unless it is a verb in the infinitive. (8) The eighth rule is that every expression that is incomplete in the second way can be a subject or a predicate. (9) The ninth rule is that an expression that is incomplete in the third way can be a subject or a predicate, but perhaps not every such expression. (10) The tenth rule is that an expression that is incomplete in the fourth way can be a predicate, but not every expression of this kind can be a subject, unless the syncategorematic term is an infinitizing and not a negating negation. (11) The eleventh rule is that no expression that is incomplete in the second way can supposit if what is added as a determination is incompatible with the

24. I start the numbering of the sections with (0) here so that the subsequent numbers will match the number of the rules to which they belong.

substantive; but if it is not incompatible, then the expression can supposit. (12) The twelfth rule is that every word to which a complex concept corresponds should be treated in the same way as the expression equivalent to it, namely [the expression] that explicates the meaning [*quid nominis*] of this word.[25] (13) The thirteenth rule is that every substantival name in the nominative case that is purely categorematic, and to which there corresponds a simple concept, can supposit. (14) The fourteenth rule is that every infinite name that can be a subject or a predicate can supposit. Many other rules could also be given, but let these suffice, for they would appear to be the most important ones.

Obviously, this lengthy passage contains fifteen sections, the first of which puts forth what is intended and the other fourteen are fourteen rules, some of which are clear enough and some rather doubtful.

(1) The first rule is clear enough from the foregoing and what follows.

(2) Also the second rule is generally accepted. So if we say 'Anything is something' or 'Nothing is a chimera', we should not think that the terms 'anything' and 'nothing' are purely syncategorematic. Indeed, they are not, because they are substantivated [*substantivata*]. Therefore, along with the distributive syncategorematic term they imply a purely categorematic word that is the subject of the proposition. For 'Anything is something' should be analyzed as 'Any thing is something', and in a similar fashion, 'Nothing is a chimera' as 'No thing is a chimera'.

(3) But the third rule raises more doubts. For many people hold that an oblique term[26] can be the subject of a proposition and can supposit,[27] namely, when it is placed at the beginning of a proposition, i.e., before any nominative.[28] For example, they say that in the proposition 'A man's donkey runs', only the word 'man's' is the subject, and the rest is the predicate, or is func-

25. *Duodecima regula est quod de omni dictione cui correspondet conceptus complexus dicendum est sicut de oratione cui ipsa aequivalet, scilicet quae explicat quid nominis ipsius orationis.* In accordance with Buridan's doctrine (in Treatise 8), I have corrected this sentence, replacing *orationis* with *dictionis.* Ria van der Lecq has accepted this suggestion in the critical edition.

26. See n. 6 above.

27. *Solum,* 'alone' or 'on its own', is deleted here in the critical text.

28. See Giraldus Odonis, *Opera Philosophica,* vol. 1, *Logica,* ed. L. M. de Rijk (Leiden: Brill, 1997), bk. 2, secs. 11–12, pp. 238–39. Girald presents two interesting arguments for the view that oblique terms can properly supposit, regardless of where they are placed in a proposition. So Buridan is apparently not addressing his views here. For detailed discussions of the medieval problem of the supposition of oblique terms see the references in n. 55. of the introduction.

tioning as the predicate and the copula; similarly, in 'A man a donkey sees',[29] 'man' is the total subject and the rest functions as the predicate. But they all concede that if the nominative precedes the oblique term, then the oblique term is not the subject of the proposition, but the nominative preceding the oblique term is the subject, or at least a part of the subject, as in the proposition 'A donkey of a man runs', the whole [phrase] 'donkey of a man' is the subject. And they have many arguments for their position, which I briefly recapitulate now.

The first argument is that since the proposition 'Every-man's donkey runs' ['Of every man a donkey runs'][30] is universal, here the subject is 'man's' and not 'donkey' or the whole [phrase] 'man's donkey'. The consequence is clear, because the subject of a universal proposition must be distributed, and nothing is distributed here, except 'man's'. But the antecedent is proved [as follows]. First, [the proposition is universal] because its contradictory, namely, 'Some-man's donkey does not run' ['Of some man a donkey does not run'], is particular and a particular only contradicts a universal proposition. Second, because a universal affirmative and a universal negative are contraries; but 'Every-man's donkey runs' ['Of every man a donkey runs'] and 'No-man's donkey runs' ['Of no man a donkey runs'] are contraries, because they satisfy the law of contraries, but not the law of contradictories, nor the law of subalterns, or the law of subcontraries; for they can both be false, but they cannot both be true at the same time.

Again, I assume on the basis of Aristotle's statement in bk. 1 of the *Prior Analytics*[31] that the following is a valid syllogism from oblique terms: 'Every-man's donkey runs; Socrates is a man; therefore Socrates' donkey runs', and I also assume that such a syllogism is in the first figure, because this is what Aristotle says and because it could not be placed in any other figure. From these assumptions it already follows that the proposition 'Every-man's donkey runs' ['Of every man a donkey runs'] is universal, as was already said, for

29. *Hominem asinus videt.* In this proposition *hominem* is the object of the verb, which is indicated by the accusative case of *homo.*

30. *Cuiuslibet hominis asinus currit.* Here, and below, the hyphen in the translation indicates that the universal sign (determiner) is construed with 'man's' alone rather than with the whole phrase 'man's donkey'. This construction is indicated in the Latin by a case agreement that is unavailable in English, hence the need for this artificial device. In fact, the sense of this Latin sentence would be more naturally rendered by 'Of every man a donkey runs', but this rendering would make it rather difficult to follow some of Buridan's further syntactic and semantic considerations. For ease of reading, therefore, I first give the "artificial" rendering and then, in square brackets, the more "natural" translation.

31. See Aristotle, *Prior Analytics* 48b41–49a5.

if the major premise is particular or indefinite, then the syllogism is not valid in the first figure. Second, it also follows that 'man's' is the subject here, for in the above syllogism it is the middle term, but in the first figure the middle term has to be the subject of the major and the predicate of the minor premise.

Again, let us syllogize as follows: "Every horse a man is seeing [*Omnem equum homo est videns;* i.e., 'Every horse is seen by some man (or other)'];[32] a horse of the king is a horse [*equus regis est equus*];[33] therefore, a horse of the king a man is seeing [*equum regis homo est videns;* i.e., 'a horse of the king is seen by some man (or other)']." Then I ask: what is the subject in the major premise? Is it the word 'horse' (and then I have what I want to prove), or the word 'man', or their aggregate? And then I show that neither 'man' nor the aggregate is the subject. First, that 'man' is not the subject here is clear, because, as was said, otherwise the major premise would not be universal but indefinite, and also the minor premise would be indefinite, and when both premises are indefinite the syllogism is not valid. Also, if 'man' were the subject here, then 'A horse every man sees' [i.e., 'A horse is seen by every man'] and 'A horse no man sees' [i.e., 'A horse is seen by no man'] would both be universal, and so they would be contraries, which is false, because they can both be true in a possible case. Also, if 'man' were the subject here, then the term 'horse' would have to be the predicate or a part of the predicate, which seems to be impossible, for neither the predicate nor a part of the predicate should in a proposition precede the subject and the copula; on the contrary, the subject has to precede the copula and the whole predicate. Next I show that neither the whole [phrase] 'horse a man' [*equum homo*] should be the subject here, for these two terms have in the construction no connection whatsoever on account of which they ought to be one term or one extreme of a proposition. And this is confirmed: for in a valid syllogism there should be only three terms, namely, the middle term and the two extremes, but in the aforesaid syllogism there would be too many terms. For in the major premise there would be two terms, namely, 'horse a man' and 'seeing', in the minor premise there would be two other terms, namely, 'horse of the king' and the

32. *Omnem equum homo est videns.* That in this Latin sentence the object of the verb is *equum* (horse) is indicated by its accusative case. That it is construed with the universal sign [determiner] is indicated by their case agreement. The "smooth" English translation is provided by the bracketed passive construction in the text. But Buridan's syntactical points do not apply to such a construction. See n. 48 below.

33. Since Latin lacks articles, the translation of *equus regis* as *'a* horse of *the* king' is rather arbitrary. Since the import of the definite article will be irrelevant to Buridan's discussion, however, and it seems easier to follow it in English using the definite article, I took the liberty of providing this translation here. Later we shall see an example of the case where Buridan's discussion does not allow such arbitrariness. See n. 76 below.

other 'horse', and in the conclusion there would be even a fifth term added, namely, the whole [phrase] 'horse of the king a man', and these are unacceptable.

Again, we argue for the main conclusion in the case of equivalent propositions, one of which is expounded by the other, in the following manner: it has to be conceded that [of such propositions] the subject is the same or [their subjects are] equivalent [with each other] and their predicate is the same or [their predicates are] equivalent [with each other]. But such propositions, in which the oblique term is placed first, are equivalently expounded by propositions in which the oblique term is explicitly changed into the nominative and is the subject of the proposition, for example, 'A man's donkey runs' is expounded as 'a man is whose donkey runs'; and similarly, 'A horse a man sees' is expounded as 'A horse is that a man sees', and so on for the rest.

Still, these arguments notwithstanding, I believe the opposite, as I sufficiently proved in q. 6 of bk. 1 of the [commentary on] *On Interpretation*.[34] I now shall repeat here some of the arguments I presented there.

One is based on the definition of subject and predicate. For the subject is that of which something else is said, and the predicate is that which is said of something else. But it is obvious that in 'A man's donkey is running'[35] the term 'running' is predicated by means of the verb 'is' not only of 'man's', but of the whole [phrase] 'man's donkey', and rather of the term 'donkey' than of the term 'man's'; this is according to grammar, which no science can contradict (for every truth harmonizes with every truth, and every science is true). Therefore, in accordance with the description of subject and predicate it is more appropriate to say that 'running' is the predicate and 'man's donkey' is the subject, and that 'donkey' is the more principal part of the subject, than to say otherwise.

Again, if I say 'Brownie is the king's donkey', everybody agrees that 'the king's donkey' is the predicate, and it does not appear that the predicate of this proposition could not become the subject and the subject the predicate by conversion, without any ungrammaticality offending the grammarian and without any falsity offending the logician.[36]

34. J. Buridan, *Quaestiones longe super librum Perihermeneias,* ed. R. van der Lecq (Nijmegen: Ingenium, 1983), bk. 1, q. 6, pp. 24–31.

35. *Hominis asinus est currens.* Here the lack of the "artificial" hyphen indicates that 'man's donkey' is to be taken as a whole phrase, constituting the subject of this proposition. Similarly, 'Every man's donkey runs' will render *Quilibet hominis asinus currit,* where the case agreement in the Latin indicates that the universal sign is construed with *asinus,* and so the subject of the sentence is *hominis asinus,* i.e., 'man's donkey', taken as a whole. See 4.2.6 n. 30.

36. That is, by the conversion of this proposition we get a perfectly grammatical proposition, 'The king's donkey is Brownie', equivalent with the original, whose subject is the com-

Again, everyone concedes that in 'A donkey of a man runs'[37] the whole [phrase] 'donkey of a man' is the subject, but both with respect to correct construction in grammar and with respect to truth in logic 'A man's donkey runs' is entirely equivalent to that proposition. So why should we posit so great a difference between them that their subject would not be the same?

Again, everyone concedes that in 'Every man's-donkey runs' the whole [phrase] 'man's-donkey' is the subject; let us therefore remove the syncategorematic term 'every', which is neither the subject nor the predicate. Why should the subject not remain the same as before? There seems to be no reason whatsoever for this, except some fictitious one.

These arguments appear to me to be plausible and more persuasive than the arguments for the opposite view. But perhaps it is possible to argue against [the opposite view] even more efficaciously by destroying its foundation, namely, that such propositions should be analyzed in the way presented above. For if this [foundation] is destroyed, [the proponents of this view] will not be able to explain how the copula distinguishes between subject and predicate, nor how such propositions are converted, nor several other points that they strive to maintain by such analyses. So let us argue against this type of analysis.

First, the proposition 'Socrates' donkey is' seems to use 'is' as an absolute predicate [*secundo adiacens*], but according to that analysis it would be used as a copula [*tertio adiacens*].

Again, 'Aristotle's horse is dead' is true, but its analysis would be false.

Again, 'The king's donkey runs' is more transparent both as to its truth and falsity [*secundum veritatem et falsitatem*] and as to its grammatical construction than 'The king is whose donkey runs', and it is not fitting that the more evident [construction] would need to be thus analyzed by the more obscure one.

Again, we can argue more efficaciously as follows. If we had to provide such an analysis, it would follow that in the proposition 'A man's donkey runs' there would be no copula [joining] the predicate to the subject, neither an explicit nor a sufficiently implicit one, which is absurd, for the copula has to be the formal [constituent] of a proposition. The consequence is evident, for a copula is not implied by any name, for a copula has to be a verb and has to

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plex term that was the predicate of the original. Note that the definite article, appearing only in the English sentence, is not part of the subject, but is a determiner, acting like a sign of quantity.

37. *Asinus hominis currit.* Using the construction 'donkey of a man' instead of 'man's donkey' in the translation is intended to match the simple change of word order in the Latin from *hominis asinus* to *asinus hominis.*

signify with time (at least in accidental supposition,[38] as we shall see later), and no name signifies with time. But neither is it implied by the verb 'runs', for even if 'runs' implies 'is running', this whole [phrase] would be a part of the predicate and another 'is' would be supplied as the copula. But 'runs' certainly does not imply two copulas; therefore a proposition such as 'A man's donkey runs' would not have a copula and, consequently, it would not be well-formed, or at least not complete, which is false.

Again, the analysis would proceed to infinity, for on whatever grounds we have to analyze 'A man's donkey runs', on the same grounds we would have to analyze the part 'whose donkey runs' of 'A man is whose donkey runs'.

Again, even if this analysis could be maintained for affirmative propositions, it could not be maintained for negatives. For 'Brownie Socrates does not see' is true, provided that both Brownie and Socrates are dead, but its analysis would then be false, namely, 'Brownie is whom Socrates does not see'. Similarly, 'A chimera Socrates does not see' is true, but its analysis, namely, 'A chimera is that Socrates does not see', is false.

But some people cavil and say that a negative proposition is not to be analyzed in this way, but as follows: 'Brownie Socrates does not see' amounts to 'Brownie is not what Socrates sees'.

To this one can object as follows. I put forward the proposition 'Brownie a man does not see', it being assumed that Socrates does not see him while Plato does see him. Then the proposition is true, whereas its analysis, namely, 'Brownie is not what a man does not see' is false, for its contradictory is true. And this argument seems to me to be sound and difficult [to answer].

Therefore, it appears to me better to say that in a proposition like 'A man's donkey runs' the whole [phrase] 'man's donkey' is the subject, just as it is the predicate in its converted form: 'A [thing] running is a man's donkey'. So 'man's' functions as a determination of the substantive noun 'donkey', and it makes no difference whether it is put before or after [the substantive] with respect to grammaticality or to truth or falsity, just as 'white man' and 'man [who is] white' do not differ, for nouns and verbs signify the same [even] when transposed, unless syncategorematic terms intervene, as is said in bk. 1 of *On Interpretation*.[39] Therefore, it does not seem to me to be reasonable that in 'A man's donkey runs' we should separate more 'man's' and 'donkey' than ['donkey' and 'of a man'] in 'A donkey of a man runs'.

And it is easy to respond to the arguments in favor of the opposite view.

To the first I reply that the proposition 'Every-man's donkey runs' is neither

38. This occurs where accidental supposition is opposed to natural supposition. See 4.3 below.

39. Aristotle, *On Interpretation* 20b1–3.

entirely universal nor entirely indefinite, for its whole subject is neither distributed, nor is it taken indefinitely, but it is indefinite in the nominative and universal in the oblique, just as we said in the case of modal propositions, namely, that sometimes they are universal without qualification [*simpliciter*], both in the mode and in the dictum, and sometimes they are universal in the dictum but particular in the mode, and sometimes conversely.[40] And since it should be denominated on account of the substantive and nominative rather than on account of its determination, I can say that 'Every-man's donkey runs' ['Of every man some donkey or other runs'] is to be called indefinite, although distributed in the oblique [term], whereas 'Every man's-donkey runs' ['Everything that is a donkey of some man or other runs'][41] is universal without qualification.

But you argue that the other proposition is universal, because its contradictory is particular. I deny this, because the contradiction was not taken correctly. Indeed, both can in some case be true at the same time, namely, if every man had two donkeys, one of them running and the other not. The contradictory is, rather, 'Some man's no donkey runs'[42] ['Of some man no donkey runs'], and this proposition should be called universal, although indefinite for its oblique [term].

But when it is further said that 'Every-man's donkey runs'[43] ['Of every man a donkey runs'] and 'No-man's donkey runs'[44] ['Of no man a donkey runs'] are contraries, I say that they are not perfect contraries, but the perfect contraries are 'Every-man's every donkey runs'[45] ['Every donkey of every man runs'] and 'No-man's donkey runs[46] ['Of no man a donkey runs']. Admittedly, the previous pair are very close to being contraries because in the negative both the nominative and the oblique terms are distributed, and so they obey the law of contraries, just as we said of some modals in the chapter on modal propositions.[47]

In reply to the second argument I concede that that is a valid syllogism with oblique terms, since one can subsume and infer the conclusion under any distributed term, be that term the subject or the predicate, or a part of the subject or a part of the predicate. For the syllogism 'Socrates is seeing every horse; Brownie is a horse; therefore Socrates is seeing Brownie' would be [also] valid.

40. See 1.8.6.
41. *Cuiuslibet hominis asinus currit vs. quilibet hominis asinus currit.*
42. *Alicuius hominis nullus asinus currit.*
43. *Cuiuslibet hominis asinus currit.*
44. *Nullius hominis asinus currit.*
45. *Cuiuslibet hominis quilibet asinus currit.*
46. *Nullius hominis asinus currit.*
47. See 1.8.6.

And it is not necessary that such syllogisms properly be in any of the three figures that Aristotle distinguished in the beginning of the *Prior Analytics,* for there he only distinguished the figures and modes of syllogisms in which the middle term is the whole subject and the whole predicate in each premise. Therefore I deny that the given syllogism is properly in any of those three figures, but it is said to belong to the first because it has a greater similarity to the first than to any other, and so it was not correctly concluded that the major premise was universal. Nor is it incorrect to syllogize in this way from indefinites, as long as the subsumption is taking place under the distributed term. For example: '[One] seeing every horse is a man; a beast of the king is a horse, therefore one seeing a beast of the king is a man'.

But further, as to the other syllogism, namely, 'Every horse a man is seeing; the horse of the king is a horse; therefore the horse of the king a man is seeing',[48] I say that this syllogism is valid. And if you ask: 'What is the subject of the major premise?', I reply that the word 'man' is here the subject, and the predicate is '[someone] seeing [a] horse', for the determination should be united with its determinable; but the word 'horse' is constructed with '[someone] seeing' as the determination with its determinable, and so, since '[someone] seeing' is evidently a part of the predicate, so is also 'horse' a part of the predicate. Therefore I note that according to [the rules of] grammar it is sometimes permitted that the predicate be placed before the subject; so it is no wonder if sometimes a part of the predicate is placed before the subject. For since the word is put there as a determination of the predicate and is not to be construed with the subject, it follows that it can be construed with the predicate. And I give an example: on the basis of grammar, which requires grammaticality, if I say 'White am I' [*Albus sum ego*], the subject of this proposition is not the term 'white', because then the proposition would be ungrammatical, but the term 'I'. [49] But if you said 'A white [thing] is I' [*Album est ego*],

48. *Omnem equum homo est videns, equus regis est equus; ergo equum regis homo est videns.* In the Latin construction the accusative form of *omnem equum* unambiguously indicates that it is the object of the verb. The lack of the corresponding declension in English, however, renders this rather awkward English construction ambiguous: we may construe it either as expressing the situation in which every horse is seen by a man (or another), or as indicating the situation when every horse sees a man (or another). On the other hand, the passive construction unambiguously describing the intended meaning of the Latin sentence (namely, 'Every horse is seen by a man [or another]') would be regarded by Buridan as having a logical structure different from the active construction (since its subject term is 'horse', whereas its predicate is '[something] seen by a man'). See n. 32 above.

49. Since in this sentence *albus* (white) is an adjective that is not substantivated in the neuter gender, it cannot be the subject. Furthermore, the first-person singular form of the copula *sum* (am) requires the first-person singular personal pronoun *ego* (I) as its subject.

then 'white [thing]' would be the subject, and not 'I', since the proposition would be ungrammatical, if 'I' were understood as the subject.[50]

Therefore, concluding as a corollary,[51] I believe that the following is a true and valid conversion: 'White am I; therefore, a white [thing] is I', in which we truly make the subject the predicate and conversely. And from this it is clear all the counterexamples are resolved, except for the one saying that it would follow that 'A horse every man sees' and 'A horse no man sees' would be universal propositions, and consequently they would be contraries, which is false, for they can both be true in a possible case. To this counterinstance I reply that these are not contraries, since contrariety requires that whatever pertains to the subject be distributed in both propositions and that whatever pertains to the predicate be distributed in the negative, so that it is incompatible with the affirmative, which is not the case here.

To the last argument we have to say that its minor premise ought to be denied. For this is not a universally appropriate analysis, nor is it always an equivalence, as we said, even if sometimes it is an equivalence. But further, as to the major premise, it is not true that all propositions that are equivalent with respect to truth and falsity have the same subject. And this is obvious first because 'Some man runs' and 'Someone running is a man' are equivalent, and so are 'Only a man runs' and 'Everything running is a man'; and so are even 'A man's donkey runs' and 'A donkey of a man runs', of which, however, they say that these do not have the same subject; and even if, as I think, they are wrong, from this it follows that they are no help to themselves with respect to that rule.[52]

Let these then be stated about the third rule as being probable, if to some people they do not appear to be demonstrative.

(4) The fourth rule need not be doubted. All grammarians would say that 'Loves is a man' is ungrammatical, unless 'loves' is taken in it materially, as when we say "'Loves' (i.e., the word 'loves') is a verb," similarly, "'Loves' is a two-syllable word," "'Loves' is a significative utterance," and so on for others. But Aristotle does form propositions from infinitive verbs, as was exemplified above.

50. In contrast to the previous case, here we have the adjective substantivated, which allows it to be the subject, and the copula in the third person singular, which prevents the personal pronoun from being the subject.

51. The critical text has here *correlative* (correlatively), but the Hubien text's *correlarie* (as a corollary) still seems to make more sense to me.

52. That is to say, the opponents' claim that these do not have the same subject, though it is false, contradicts their other claim, functioning as the major premise of the argument discussed here, namely, that equivalents should have the same subject.

(5) Again, the fifth rule is not found to have a counterinstance as to its first part. But as regards nonsubstantivated adjectives I hold that they cannot be the subject of a proposition in themselves, i.e., without a substantive name, for the proposition would be ungrammatical, unless the substantive were implied. But I am doubtful whether they can be predicated in themselves by virtue of the implied substantive, since in a conversion the subject should become the predicate and the predicate should become the subject, and an adjective cannot become the subject in itself, unless it gets substantivated. And on this question we should have recourse to grammar, if the truth cannot be determined in logic.

(6) The sixth rule is likewise accepted, because otherwise the expression would be ungrammatical according to all grammarians.

(7) The seventh rule is true in the same way as are the sixth and the fourth.

(8) In a similar manner, the eighth rule is never found to have a counterinstance.

(9) But the ninth rule is problematic, just as is the third. For many people hold that in a categorical proposition with a conjunctive or disjunctive subject it is not the whole conjunctive or disjunctive [term] that should be regarded as the subject, but only its first member. For example, in 'A man and a donkey run', 'man' should be taken to be the subject and the rest should be regarded as belonging to the predicate, and 'A man and a donkey run' should be analyzed as 'A man is who and a donkey [that] runs'. In a similar manner, 'A man or a donkey is risible' is to be analyzed as 'A man is who or a donkey [that] is risible'. And they hold this view because it appears to them that otherwise it would be impossible to determine correctly the quantity of 'Every man or donkey is risible' or even of 'Every man and donkey run', or of 'Socrates or a donkey runs', or even of 'Socrates or Brownie runs', which cannot be said to be singular, because its subject is predicable of many things, namely, of Socrates and Brownie. Similarly, one could not tell the quantity of 'Every man or donkey runs', which seems to be universal, but it is not, for one could not determine the singulars that follow from it. This is because, although it entails 'Socrates or Brownie runs', it was just argued that the latter is not singular. And since with every indefinite one must be able to correlate a universal and a singular proposition, one might ask which universal proposition and which singular proposition correspond to the indefinite 'A man or a donkey is running' or to 'A and B are C'.

Again, the following syllogism is in the first figure: 'Every man or donkey runs; Socrates is a man; therefore, Socrates or a donkey runs', and in the first figure the middle term should be the subject of the major premise and the predicate of the minor premise, and this is the term 'man', therefore, [the subject of the major premise is 'man'].

Despite these arguments, I hold the contrary opinion, and I can deploy many arguments for it, similar to the ones I brought up for the third rule.

But for the time being I argue that if I say 'A chimera or a donkey is an animal', the proposition is well formed and the whole disjunct term 'chimera or donkey' provides the subject for the verb 'is'; therefore, in keeping with the nature and condition of disjunction, if that verb with the subsequent predicate is true of one member of that disjunct term, it follows that the proposition is true. On the other hand, its analysis, namely, 'A chimera that is or a donkey [that] is an animal', would be false.

Again, when we discussed hypothetical propositions we said that if 'Socrates is where Plato is' and 'Socrates lectures when Plato listens' are hypothetical propositions, then, by the same token, so are 'Socrates is such as Plato is' and 'Socrates is as much as Plato is' and 'Socrates is what Plato is'. Therefore, in the same way, 'A man is who or a donkey runs' is a hypothetical of which the first categorical member is 'A man is' and the second is 'who or a donkey runs'; in this, however, the whole disjunctive term 'who or a donkey' is the subject, unless you provide an infinite analysis. And so the original problem returns.

Again, it is obvious that 'Matter and form are the composite [substance]' is simpler and more clear than 'Matter is which and form are the composite [substance]', so why should the former be expounded by the latter?

Furthermore, everybody permits disjunctive predicates, as in 'Socrates is a man or a donkey'. And there appears no reason why that predicate could not become a subject by conversion. So it does not appear to me that the ninth rule should be denied for such trifling difficulties.

Nonetheless, it is true that a conjunctive subject is usually taken in two ways. In one way, collectively, as in 'Matter and form are the composite [substance]' or in 'Brownie and Tawny cost ten pounds'. So if you were to ask about the quantity of 'Matter and form are the composite [substance]', I would say that it is indefinite, and its contradictory is 'No matter and form are the composite [substance]'. And if you were to ask: 'But what are its singulars?', I would say that they are the affirmative singulars: 'This matter and form are the composite [substance]', 'That matter and form are the composite [substance]', and so on for the rest, pointing [every time] to one form and one matter. And if you were to ask about the quantity of 'Brownie and Tawny cost ten pounds', I would say that it is singular and that its contradictory is 'Brownie and Tawny do not cost ten pounds'. And if you asked what is a universal of such a singular, I would say that first one must take a common term, which [, e.g.,] will be the conjunctive term 'donkey and donkey', and then it is distributed as in 'Every donkey and donkey cost ten pounds'.

But in another way a conjunctive subject is taken dividedly (in the sense that 'dividedly' is opposed to 'collectively'). And then the proposition can be analyzed by a conjunctive proposition, e.g., 'Socrates and Plato run' can be analyzed as 'Socrates runs and Plato runs'. And the contradictory [of such a proposition] is to be formed either by prefixing the negation to the whole proposition, or by a negative with a disjunctive subject, so that we have 'Socrates or Plato does not run', and thus, according to the [suggested] analysis, 'Socrates does not run or Plato does not run'. Similarly, if I say: 'Every man and a donkey run', it follows, by resolving this into a conjunctive proposition, that every man runs and a donkey runs. And if you ask about the quantity of this proposition I say that it is neither purely universal nor purely indefinite, but it is universal with respect to the first part of the subject and indefinite with respect to the second; and its contradictory is to be formed either by prefixing the negation or by analogy with the aforementioned case.

But then something should be said about the disjunctive subject, as in the cases of 'Socrates or Plato runs' or of 'Brownie or Tawny cost ten pounds'. In this instance we should realize first that there is no place here for a collective sense, for 'collective' and 'disjunctive' are in a way incompatible. We should also note that when the distributive sign is put at the beginning of a proposition, it can be distinguished with respect to composition and division, as in 'Every man or (a) donkey runs'. For it may be understood so that the sign distributes only the first noun, namely, 'man', and then the proposition is not totally universal but partly universal and partly indefinite, and is equivalent to 'Every man runs or a donkey runs', and it is contradicted by 'Neither every man nor a donkey runs', or by a negation preceding the whole proposition and affecting the copula (which is a general rule), or by a conjunctive proposition contradicting the equivalent disjunctive proposition. In the other way, the sign can be understood to distribute the whole subject, and then the proposition is purely and simply universal and is equivalent to 'Everything that is a man or a donkey runs'. It is contradicted by 'A man or a donkey does not run' or by 'Something that is a man or a donkey does not run'. Its singulars, over which induction should take place to conclude to such a universal, are 'Socrates runs', 'Plato runs', 'Brownie runs', 'Tawny runs', and so on for the rest of men and donkeys. This is not difficult to see, for even fishwives speak in this fashion.

But then there is a doubt as to whether 'Socrates or Brownie runs' is singular. And I say that it is not, as was correctly argued, but it is rather like an indefinite. For an indefinite has the import of a disjunctive proposition, for example, 'a man runs' is equivalent with 'Socrates runs or Plato runs' and so on for the rest. And so the singulars of the disjunctive proposition 'A man or

a donkey runs' would be 'Socrates runs', 'Plato runs', 'Brownie runs', 'Tawny runs', and so on for the other singulars, men as well as donkeys.

Similarly, I say that 'Every man or donkey runs' is not, absolutely and properly speaking, a universal proposition, for a universal has to have the import of a conjunction (for 'Every man runs' is equivalent with 'Socrates runs and Plato runs' and so on for the other men). And so, absolutely speaking, the universal corresponding to the indefinite 'A man or a donkey runs' would be 'Every man or every donkey runs'.

We should also note that if in a proposition with a conjunctive subject the verb is singular, as in 'Every man and donkey runs', then the grammaticality of the proposition requires that the addition 'and donkey' be interpreted as a determination of the preceding noun, in the sense of 'Everything that is a man-and-donkey [runs]', or in the sense of 'Every man who is a donkey [runs]', so that the proposition properly speaking does not have a conjunctive subject. For a conjunctive subject is equivalent to a plural subject that provides the supposita for the verb; therefore the verb [also] has to be plural.

And these are the major points that, nevertheless, some people call into doubt owing to their poor education in grammar or in logic.

We should also note that some might ask whether it is the composite or the divided sense that is properly expressed by 'Every man or (a) donkey runs', that is to say, whether only the term 'man' or the whole subject is distributed. And I say that we have to respond differently, in accordance with different manners of speaking and writing. For if immediately after 'man' there is a sign of division, namely, a pause or a period, then the proposition will be called divided, and only 'man' will be distributed, but if not, then it will be called 'composite', and the whole subject will be distributed. So much for the ninth rule.

Concerning the addition [to the ninth rule] 'but perhaps not every such expression' we can say that it was added because of conjunctions and disjunctions of oblique terms, such as 'Socrates' and Plato's' or even 'Socrates' or Plato's', for such a complex term cannot be the subject or the predicate, as neither can an oblique name taken on its own.

(10) The tenth rule is obvious. For if I say 'Every man runs' or 'No man runs' or 'It is not the case that a man runs', so that the negation is a negating negation, then we assert that only 'man' is the subject. But if we say 'A stone is no man' or 'Socrates is every man', then we say that the whole phrase 'every man' or 'no man' is the predicate, as was said above. But if we say 'A non-man runs' and the negation is taken to be infinitizing, then we assert that the whole [phrase] 'non-man' is the subject. It was said, nonetheless, that not every such complex phrase can be predicated, because, 'if man', 'and man', 'or man', 'either man', and the like are counterinstances.

(11) The eleventh rule is obvious. For if I say: 'A man able to neigh runs', the phrase 'able to neigh' will prevent supposition for men, and the word 'man' will prevent supposition for things able to neigh, and so the whole supposits for nothing. The same would be the case if we were to say: 'A man unable to laugh runs', or 'A man who is a horse runs', or 'A man who is not an animal runs'.

(12) The twelfth rule is manifest by itself. Because the reason why the term 'vacuum' does not supposit is that the expression 'place not filled with body' likewise does not supposit. Neither would a word supposit, or be a subject or a predicate, if it were imposed to signify equivalently with a whole proposition.

(13) The thirteenth rule is also clear. For there is nothing in such a substantive that would impede [its] supposition, since no determination inconsistent with its determinable is implied in it.

(14) The last rule appears to me to be true. Admittedly, of all infinite terms it appears most of the term 'non-being' that it cannot supposit. But this is false. For although it does not supposit for any one thing, it does supposit collectively for many things, whence we truly say that an army is a non-being, and that Socrates and Plato are a non-being, for they are, and are not a being. Therefore, if there were a counterinstance to this rule, it would be the complex term 'non-being that is not beings', for if Socrates and Plato are said to be a non-being, they are nevertheless a non-being that is beings.

4.3 Chapter 3: The common modes and sorts of supposition

4.3.1 The aim of the chapter and the division of supposition into proper and improper

Now we propose to speak about the common modes and divisions of suppositions. The first division of supposition sorts out some supposition that is proper from some that is improper or figurative. Supposition is called proper when the utterance supposits according to that nature or signification commonly instituted for it. It is called improper when the utterance supposits according to the signification of another utter-

ance, figuratively, because of some similitude, or for the sake of irony or for some other reason of this sort, as when we say that the meadow is laughing.

The third chapter is about the common modes and divisions of supposition and has eight sections. The first is about the division of supposition into proper and improper, the second is about the division of supposition into personal and material, the third is about the division of personal supposition into common and discrete and into absolute and relative supposition, the fourth is about the division of common supposition into natural and accidental supposition, the fifth is about the division [of accidental supposition] into confused and determinate supposition, the sixth is about the division of confused supposition into distributive and nondistributive, the seventh is about the causes and modes of distributive confusion, and the eighth is about the causes and modes of nondistributive confusion.

As to the first section, it is clear that we call a man an ass, if he is rude, because the ass seems to be a rude animal. And so this term is not posited in this proposition to supposit properly, for it neither supposits for itself nor for asses, which it was imposed to signify, but it supposits for things for which the term 'rude' would supposit, if it were put in this proposition in the place of the term 'ass'. It is also in this way that we call a cruel man a lion, and God a pious lamb, or the Lion of the tribe of Judah; and thus we say that the meadow is laughing or that someone is plowing the seashore if he is doing something useless.[53] Similarly, a father says ironically to his son: 'Oh, you are a very good boy', and by this he intends that the predicate 'good boy' should supposit not for a good boy but a bad one. This kind of supposition does not belong to the speculative sciences, however, but to poetry, so let [consideration of] this supposition be omitted for now.

4.3.2 The division of supposition into material and personal

(1) In another way supposition is divided into material and personal supposition. (2) And supposition is called personal when the subject or the predicate of the proposition supposits for its ultimate significates or for its ultimate significate, as the term 'man' supposits for men in the propo-

53. See 6.5.9 n. 110.

sition 'A man runs'. (3) But supposition is said to be material when an utterance supposits for itself or for one similar to itself, or for its immediate significate, which is the concept according to which it was imposed to signify, as the term 'man' in the proposition 'Man is a species'.

This part contains three sections. The first covers the division of supposition and the other two are clarifications of the members of the division.

Of the first we should realize that some people have posited also a third member, which they called 'simple supposition'. For they held that universal natures are distinct from the singulars outside of the soul. And so they said that a term supposits personally when it supposits for the singulars themselves, that it supposits simply when it supposits for that universal nature, and materially when it supposits for itself. But I hold that Aristotle correctly refuted that opinion in the seventh book of the *Metaphysics,* and so this kind of supposition has to be eliminated, at least according to this interpretation. In another manner, others call supposition 'simple' when an utterance supposits for the concept according to which it is imposed and material when it supposits for itself or another similar to itself. And this can be permitted, but I do not care [about this usage], for I call both 'material supposition'.

Note also that supposition is not called 'personal' because it is for persons, nor is it called 'material' because it is for matter. Therefore these names are being used here rather improperly, according to the senses expressed by the other two sections. But this is how logicians have become accustomed to use these names, and this they were allowed to do, for names are significative by convention [*ad placitum*].

For the other sections we should recall what was said earlier, namely, that categorematic words that are apt to supposit signify things by the mediation of their concepts, according to which concepts, or similar ones,[54] they were

54. The critical text here has *similitudines* (likenesses), instead of the Hubien text's *similes* (similar ones). The reading of the critical text also makes good sense, given the fact that medieval philosophers often referred to concepts as the likenesses of the things they represent. The Hubien text, however, seems to be more in line with Buridan's doctrine that categorematic terms were not imposed to signify according to the same concepts according to which they are now used, in the sense of strict numerical identity. For the concepts according to which they were imposed existed in the minds of those who imposed these terms, whereas the concepts according to which they are being used now exist in the minds of present users of these terms. But the concepts of present users are not numerically the same entities as the concepts of those past users (because they exist in different subjects); they are only similar in that they represent the same things. To be sure, this sameness in representation still guarantees the sameness of the signification of the term or terms subordinated to these representationally similar but, in their being not numerically identical, concepts.

imposed to signify. So in this passage we call the things conceived by those concepts 'ultimate significata', whereas the concepts we call 'immediate significata'. Whence the second section is clear enough.

But as to the third, we should note that since universals (that are principally so called according to predication) do not exist outside the soul, they are nothing but the concepts of the soul, by which the soul conceives indifferently of several things, as it conceives indifferently all men by means of the concept whence the name 'man' is imposed, and the same is the case with the concept of animal with respect to animals. Therefore, since species and genera are universals according to predication, it is evident that species and genera are such concepts of the soul. It is true, nevertheless, that in a derivative manner also spoken terms are called genera and species, for example, the utterances 'man' and 'animal', but they are not called universals or genera and species principally but rather taken as signs, by attribution [*secundum attributionem*] to those universal concepts, because they are imposed to signify some things according to those concepts, just as urine is called 'healthy' because it is the sign of the health of the animal. And in this derivative manner, by the mediation of utterances, even written terms are called genera or species, or singulars or subjects or predicates. Therefore, if the spoken term 'man' supposits for the concept in accordance with which it was imposed to signify men, as when we say that man is some universal or that man is a species, meaning that the mental term to which the utterance 'man' is subordinated [is some universal or a species], then this is called 'material supposition'. Similarly, if an utterance supposits for itself, or for one similar to itself, or for an inscription corresponding to it, as in saying that 'man' is a monosyllable, or a name of three letters, or is written in my book in beautiful letters, any such supposition is also called 'material'. And we should note in connection with material supposition that if an utterance supposits materially for an utterance, it is not necessary that it always supposits for itself, for it often supposits for a similar or corresponding utterance. For example, if I say, 'That a man is an animal is true', or 'That a man is a stone is false', the subjects of these propositions, the 'that-clauses', supposit materially for propositions.[55] For I take it that only

55. "Verbi gratia, si dico 'hominem esse animal est verum', vel 'hominem esse lapidem est falsum', subjecta harum propositionum, quae sunt orationes infinitivi modi, supponunt materialiter pro propositionibus." In these examples in the Latin it is accusative with infinitive constructions that have the same function as the 'that-clauses' in the English translation. But English also has infinitives playing the same role, as in 'To cut is to act', whereas in Latin we can also use the equivalents of 'that-clauses' to do the same, as in *Quod homo est animal est verum* (That a man is an animal is true). Such sentential nominalizations were extensively discussed already in the twelfth-century logic tract *Ars Burana,* called there *appellationes dicti,* taken to be referring to what a proposition as a whole signifies, the *dictum* or *enuntiabile.* See

a proposition is true or false; therefore, if the proposition 'That a man is a stone is false' is true, then 'that a man is a stone' has to supposit for some proposition; so not for itself, for it is not a proposition, but it supposits for a proposition of the indicative mode, namely, for a proposition like 'A man is a stone'. For we often use such that-clauses in this manner, even if they also can often supposit personally, as when I say, 'That Socrates acts rightly is good for him', or 'Cutting is acting', or 'A man's being white is a man's being colored', or 'God's being is God', and so forth.

But youngsters may have several questions concerning what has just been said.[56] The first question is: 'If a term or expression may supposit either materially or personally in a proposition, which supposition should be assigned to it by virtue of its proper meaning [*de virtute sermonis*]?' That is to say: Are the propositions 'Man is a species', 'Animal is a genus', 'To love is a verb', and the like true or false by virtue of their proper meanings, or should they be distinguished?

Concerning this problem there are three opinions. Some people say that 'Man is a species' is false when based on its proper meaning. For the principal sort of supposition is personal supposition, given that utterances are imposed to supposit for their ultimate significata, since we cannot carry the ultimate significata to disputations. Again, utterances were not imposed to supposit for themselves, for when this happens even those utterances are able to supposit that were not imposed to signify, as in 'Buf has three letters' and in 'Bufbaf has two syllables'. And then they go on to say that truth or falsity based on proper meaning should be determined according to the primary and principal supposition, and therefore according to personal supposition. But 'Man is a species' is false if taken in this way; therefore, it has to be said to be false, absolutely speaking, on the basis of its proper meaning [*de virtute sermonis*].

Another opinion states the contrary, namely, that 'Man is a species' is true by virtue of its proper meaning. For speech [*sermo*], in signifying and supporting significatively, only has any import [*virtus*] because of conventional imposition and usage, and we cannot know the [original] imposition except from the usage of authors. But authors and philosophers have used 'Man is a species' as a true proposition, and it is true only insofar as it incorporates

L. M. de Rijk, *Logica Modernorum: A Contribution to the History of Early Terminist Logic,* 3 vols. (Assen: van Gorcum, 1962–67), pp. 357–59. These *dicta* or *enuntiabilia,* or in the fourteenth-century terminology of Gregory of Rimini, *complexe significabilia,* became rather unwelcome entities for Buridan's nominalist ontology, which explains Buridan's efforts to describe the referring function of such sentential nominalizations primarily in terms of material supposition. See *Sophismata,* chap. 1, Fifth sophism.

56. This remark nicely indicates that Buridan's students at the Arts Faculty were generally younger than the students of the advanced faculties (Law, Medicine, and Theology).

material supposition; so in this proposition we have to consider this material supposition as based upon its proper meaning.

The third opinion, with which I agree, is that an utterance does not have any proper import [*virtus propria*] in signifying and supposing, except from ourselves. So by an agreement of the disputing parties, as in obligational disputations, we can impose on it a new signification and not use it according to its common signification. We can also speak figuratively [*transsumptive*] and ironically, according to a different signification. But we call a locution 'proper' when we use it according to the signification commonly and principally given to it, and we call a locution 'improper' when we use it otherwise, although we legitimately can use it otherwise. So it is absurd to say that a proposition of an author is false, absolutely speaking, if he puts it forth incorporating an improper locution, according to which it is true. Instead, we ought to say that it is true, since it is enunciated according to the sense in which it is true. And this conforms with what Aristotle says in book 1 of the *Ethics,* namely, that locutions are to be taken and understood in accordance with their subject matter.[57] But we should correctly say that the proposition would not be true were it to be put forward and taken as a proper locution. So, if we want, by agreement, to call such an appropriateness of a locution its 'proper meaning' [*virtutem sermonis*], then I would say that 'Man is a species' is true insofar as it is put forth by authors, but it is not true according to its proper meaning, i.e., it would not be true if it were put forward as a proper locution; this is because utterances primarily and principally were imposed to signify so as to stand for their ultimate significata, and not for themselves, as was noted before. So it absolutely seems to me that wherever it is evident that an author puts forward a proposition in a true sense, although not as a proper locution, then to deny that proposition without qualification would be cantankerous and insolent. But to avoid error, it should be properly pointed out that the proposition is not true in the proper sense, or by virtue of its proper meaning, and then it has to be shown in which sense it is true.

Some other minor doubts may be raised, such as the following: "How does 'runs' supposit in the proposition 'runs cannot be the subject of a proposition'? If you say that it supposits materially, for itself, then the proposition would already be false, for in fact it is the subject of this proposition." I reply that it supposits materially for all such terms;[58] but the proposition has to be expounded according to its true sense, namely, that a term such as 'runs' cannot be the subject of a proposition taken significatively, but it can when taken materially.

57. Aristotle, *Nicomachean Ethics* I.3.1094b12–28.

58. That is, for all similar utterances or inscriptions, and hence also for this: runs.

Another doubt is: "How does the subject supposit in the proposition: 'A noun is a conventionally significative utterance'?—it appears that it supposits materially, as it supposits for itself and for many other terms." I say that it supposits personally, for it does not supposit for itself because it is such an utterance but because the term 'noun' and many other terms are the ultimate significata of the utterance 'noun'. In the same manner also, in the proposition 'Every utterance is a sound' the terms supposit personally, even if they supposit for themselves, for they supposit for themselves only insofar as they are, together with other utterances and sounds, the ultimate significata of the utterances 'utterance' and 'sound'.

Another doubt concerns the proposition '[A] genus is a species of [a] universal'.[59] And I say that the proposition would be true taking the whole significatively and personally as well as taking the terms 'genus' and 'universal' materially. For it is true personally, because the terms 'animal', 'plant', 'substance', 'color', and the like are among the ultimate significata of the terms 'genus' and 'universal'. Therefore the proposition is true significatively, for the term 'animal', which is a genus, is a species of the term 'substance', which is a universal. And it is true materially, because the term 'genus' is a species of the term 'universal'.

There is also a query concerning the propositions 'Socrates is a primary substance' and 'man is a secondary substance'. I say that the terms 'socrates' and 'man' supposit materially, going by the manner in which such propositions are stated in the *Categories.* But of the term 'substance' we have to say that it is often used in logic and in philosophy so that it supposits for terms that belong to the category that is called the category of substance. And it appears to me that this is material supposition and this is how it ['substance'] supposits in the aforementioned propositions, for this is how they are true, and this is how they are put forward by authors.[60] But when the term 'substance' supposits for the *per se* existing things signified by substantial terms, then this is personal supposition. And the same should be said about the term 'quality' and the term 'accident' and many others. For they often supposit for the terms in the category of quality and in the categories of accidents, and so they supposit materially, and they sometimes also supposit for the things sig-

59. *Genus est species ipsius universalis.* Because of Latin's lack of articles, this sentence is ambiguous in Latin in the way expounded by Buridan in the subsequent discussion. English syntax "automatically" removes this ambiguity by the addition or omission of the indefinite article. In the translation I indicate this type of ambiguity by bracketing the articles.

60. See Buridan's exposition of Aristotle's doctrine of the categories in Treatise 3 above, a glaring example of the nominalist tactics Buridan used to reduce the ontological commitment of his semantic theory, even at the expense of quite obviously distorting Aristotle's original intentions.

nified by these terms, and then they supposit personally. So when it is said "'White' is an accident," the terms supposit materially, and when it is said 'A white thing is a man' or 'A white thing is a substance', then the terms supposit personally. (I assert this inasmuch as these propositions are true).

There is also a query regarding the following propositions: '[A] color is the primary object of sight', '[A] sound is the primary object of hearing', 'To [a] man it is accidental to be white', 'To [a] triangle of itself [*per se*] and primarily pertains the having of three angles equal to two right angles', and 'To [an] isosceles this pertains of itself [*per se*] but not primarily', and the like.[61]

I assert that the propositions '[A] color is the primary object of sight' and '[A] sound is the primary object of hearing' can be expounded according to personal supposition, i.e., as 'Some color is primarily perceived by sight', which can be true, if among all the things that are principally perceived by sight there is some color that is perceived by sight and nothing else is perceived by sight prior to it. And in this way Aristotle, holding the eternity of the world, would deny '[A] color was the primary object of sight', for no color was so perceived by sight that no other had been perceived earlier, presupposing that all colors are generable and corruptible. And we could say similar things about sound and hearing.

But perhaps authors put forward these propositions according to material supposition, in the sense that such a proposition is *per se* and primarily true, because 'color' or 'colored' can be converted with 'is visible' (and we have to take 'color' here in the wide sense, insofar as it includes also light); likewise this is how sound is said to be the primary object of hearing, i.e., the proposition 'Sound is audible' or 'What sounds is audible' is *per se* and primarily true. For this is how they are said to be *per se* and primarily, just as is the proposition 'Man is risible'. But in the proposition 'To man it is accidental to be white' the whole [embedded proposition] should be taken materially, in the sense that the proposition 'man is white' is true *per accidens.* And similarly for the triangle and the isosceles, namely, in the sense that the proposition 'A triangle has three angles equal to two right angles' is true *per se* and primarily, whereas 'An isosceles has three angles equal to two right angles' is true *per se* but not primarily, because not convertibly. Similarly, if I say 'That God does not exist is false' or 'That man is an animal is true', the subjects supposit materially for the propositions 'God does not exist' and 'Man is an animal'. On the other hand, if I say 'That man is a donkey is nothing', then all terms are taken significatively, but the subject does not supposit. But if I say 'That God exists is God' I say something true, and both terms supposit personally.

61. Concerning the significance of brackets here see n. 59 above.

4.3.3 The division of personal supposition into common and discrete

> Personal supposition is divided into common and discrete supposition. Common supposition occurs when a common term supposits, as does the term 'man', and discrete supposition occurs when a discrete term supposits, as do the terms 'Socrates' or 'this man'. Again, personal supposition is divided into absolute, which involves an absolute term, and relative, which involves a relative term.

This section puts forth two divisions, which are manifest in themselves. Whatever should be said about relative supposition in particular will be presented in the next chapter.

4.3.4 The division of common personal supposition into natural and accidental

> Common supposition is usually divided into natural and accidental supposition. Supposition is called 'natural' when a term supposits indifferently for everything for which it can supposit, present, past and future; this is the sort of supposition we use in the demonstrative sciences. Supposition is called 'accidental' when a term supposits only for present things, or only for present and past, or only for present and future things, as the verbs and predicates require, and will be explained later. Again, this is the supposition we use in telling stories, and this is also mostly used by sophists.

Many modern authors deny that there is natural supposition in the sense in which it was presented in the text. But, without reciting their opinions, I show that we often use it.

First, this occurs because the verbs 'understand', 'know', 'recognize', 'opine', 'signify', and many others make the terms construed with them supposit or be taken for everything, present, past, and future. So from 'A man who existed is thought of' (e.g., Aristotle) it follows 'Therefore, a man is thought of'. Similarly, 'A man who will exist is thought of' (e.g., the Antichrist) entails 'Therefore, a man is thought of', as I said in the *Sophismata,* chapter 5, i.e., "On Ampliation."

Second, the same is evident in the case of the proposition 'Everything that

is or was or will be B runs', for the subject supposits for present, past, and future things, whether it is true or false.

Third, the same is clear also when the term is confused by the words 'perpetually', 'eternally', 'always', and their like. For such words were imposed, as it would appear from the usage of authors, to distribute for present, past, and future times. So it would not appear to be correct usage of the word 'always' if we said that Socrates always runs, given that he ran only in this one hour, even if we took only that hour as the present. Therefore, in the given case the proposition 'Socrates runs at every time' could be conceded, but everybody would shrink from conceding that Socrates eternally runs, or that Socrates perpetually runs, or that Socrates always runs. Aristotle, however, conceded such propositions concerning the movement of the heavens. So it seems that 'Man is always an animal' is not equivalent to 'Man at every time is an animal' but to 'At every present, past, and future time, man is, was or will be an animal'. But it appears to me that neither these points nor their opposites can be demonstrated, for they depend on the conventional significations of words.

Furthermore, and fourth, the demonstrative sciences also use this sort of supposition. For if we say in [connection with] the *Meteorologica* that every thunder is a sound made in the clouds, or that every rainbow is a reflection or refraction of light, then we do not intend to say these things only concerning the present ones; indeed, even if there were no thunder or rainbow at the present time, we would nevertheless say the same things. And if a geometer has a demonstration that every triangle has three angles equal to two right angles, we should not imagine that thereby he would have knowledge only of the triangles that actually exist; on the contrary, if this habitual knowledge of his remains for three years, and meanwhile many triangles are generated, he will have knowledge of those as well as of the others even in the absence of a new demonstration. Aristotle explicitly states this in bk. 1 of the *Posterior Analytics:* "I call '[true] for all' [*de omni*] that which is not such that it holds for some and does not hold for another, nor such that sometimes it holds and sometimes it does not."[62] And he clarifies this by an example, saying, "as 'animal' [is true] for all men, because if it is true to call someone a man, then it is true to call him an animal, and if the one is true now, then so is the other." He also confirms this by a further piece of evidence [*signum*], saying "a piece of evidence for this is that when we object to such a [true]-for-all-claim then we inquire whether it does not hold for some things or sometimes." Nevertheless, we can correctly say that in this case [putting forth] such a locution with this intention is not in accord with its proper meaning, but [it is put forth] for the sake of brevity. For when we want to speak demonstratively, and we say that

62. Aristotle, *Posterior Analytics* 73a30–35.

every thunder is a sound made in the clouds, or that every lunar eclipse is due to the interposition of the Earth between the sun and the moon, then these propositions would not be true by virtue of their proper meaning [*de virtute sermonis*]. For the verb 'is' by virtue of its proper meaning was imposed to signify only the present time, whereas there may be no thunder or lunar eclipse at the present time. And so such propositions are propounded for the sake of brevity in place of 'Every thunder, whenever it is, was, or will be, is, was, or will be a sound made in the clouds' and 'Every lunar eclipse, whenever it is, was, or will be, is, was, or will be due to the interposition of the Earth between the sun and the moon'. Such propositions therefore are not to be denied, since they are true given the way in which they are propounded, but they would be false if they were advanced and taken in their proper sense. And since sophists want to take propositions only in their proper sense, they do not use such supposition in the manner described in this case.

Again, just as the intellect is able to conceive of man and animal without any distinction of time by means of the concepts whence the terms 'man' and 'animal' are imposed, so it is likely that it is able to form a complexive concept without any distinction of time. But then the mental proposition [formed with this concept] will be indifferent with respect to all present, past, and future times, and so also [its] terms will supposit for everything from those times indifferently. But we do not have an utterance properly imposed to signify such a mental copula, so we can use the verb 'is' by convention [*ad placitum*] to signify such a copula by which the present time will no more be signified than is the past or the future: indeed, [it will signify] no time at all, and so there will occur a natural supposition of the terms.

In fact, perhaps we can show from our faith that we are able to form such mental propositions. For God could preserve all things in rest, without motion (I mean all things other than motion). So let us suppose that He does so. Then nothing would be time, if every time is motion, as Aristotle shows in bk. 4 of the *Physics*.[63] Nevertheless, the souls of the blessed would know and understand by mental propositions that God is good and that they are present to Him; and by the copulas of those mental propositions they would not co-understand [*cointelligerent*] time, for they would also know that there is no time, and so they would know that neither they themselves nor God did exist in the present time and that they did not coexist with the present time either. And it appears to me that a spoken copula imposed precisely to signify such a complexive concept would be purely syncategorematic, whereas others, which connote a certain time, already share [the characteristics of] categorematic [terms], in that beyond their concept they also signify an exter-

63. Aristotle, *Physics* IV.2.219a2-b4.

nal thing conceived besides the things signified by the subject and the predicate, namely, time.

But one can argue even further for this natural supposition. For as I can conceive indifferently all animals, e.g., men, horses, and donkeys, by one concept, on which the name 'animal' is based, without conceiving men or horses or donkeys by means of the specific concepts from which the names 'man', 'horse', and 'donkey' are taken, so, too, I can conceive all times indifferently by means of one common concept, on which the name 'time' is based, without conceiving present, past, and future [time] by means of corresponding specific concepts. Therefore, even assuming that the copula of a categorical proposition must signify with time, nevertheless, it would not have to signify determinately the present time or determinately the past or the future, by specific concepts, but it could signify time according to a concept common to all times without any distinction of present, past, or future. These are the sorts of things that can be said about that supposition which some people, using names by convention [*ad placitum*], have called 'natural'.

4.3.5 The division of common personal supposition into confused and determinate

(1) Again, common personal supposition is divided into confused and determinate. (2) The supposition of a term is called determinate if it is necessary for the truth of the proposition in which it is posited (or of a proposition similar in form) that it be true for some determinate suppositum. For example, if 'A man is white' is true, then it has to be true for this man and this white thing, or for that man and that white thing, and so on for each.[64] (3) But the supposition of a term is called confused

64. The translation here follows the Hubien text. The critical text simply has the following: "Ut si ista sit vera 'homo est albus', oportet quod sit vera pro isto homine vel pro isto albo, et sic de aliis"—"For example, if 'A man is white' is true, then it has to be true for this man or for this white thing, and so on for the rest." An earlier version of the critical text had here the following: "Ut si ista sit vera homo est albus, oportet quod sit vera pro isto homine albo vel pro isto homine albo, aut quod ipsa sit vera pro aliquo homine et aliquo albo, et sic de singulis omnibus aliis similibus propositionibus in quibus ponitur terminus habens suppositionem determinatam, ut clare patet distribuendo in singulis"—"For example, if 'A man is white' is true, then it has to be true for this white man, or for that white man, or it should be true for some man and some white thing, and so on for every other similar propo-

> if the proposition in which it is posited (or one similar in form) can be true without its being true for some one suppositum of this term. For example, the proposition 'Every man is an animal' is true, but it is not sufficient[65] for its truth that it be true for Socrates or for Plato.

This part contains three sections, namely, a twofold division and a clarification of both members of the division. And from the exposition of the members of the division it is clear that the division was made in quite appropriate terms. Nevertheless, I should say that in determinate supposition the proposition need not be true for one suppositum only; indeed, sometimes it is true for any suppositum. But it is necessary and sufficient that it should be true for one. So we have to note immediately that there are two conditions for the determinate supposition of some common term. The first is that from any suppositum of that term it is possible to infer the common term, the other parts of the proposition remaining unchanged. For example, since, in 'A man runs', the term 'man' supposits determinately, it follows that 'Socrates runs; therefore, a man runs', 'Plato runs; therefore, a man runs', and so on for any singular contained under the term 'man'. The second condition is that from a common term suppositing in this manner all singulars can be inferred disjunctively, by a disjunctive proposition. For example, 'A man runs; therefore, Socrates runs, or Plato runs or John runs, . . .' and so on for the rest. But in confused supposition of any sort one of these conditions is not met. If you ask: 'How do I know when the supposition is determinate?' I say, first, that you will be able to know if you see that the two previously mentioned conditions are met; and, second, you will know if you see that there is no cause for confusion; such causes of confusion are discussed below.[66]

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sition in which there is a term having determinate supposition, as is obvious by distributing over each." This more complicated reading is now listed in the critical apparatus, along with other minor variations on which the Hubien text is also apparently based.

65. The Hubien text has *requiritur* (required) instead of the critical text's *sufficit* (sufficient). From the critical apparatus it appears that some manuscripts provide one, others the other. As a matter of fact, doctrinally both are possible, depending on whether we consider the subject or the predicate term of 'Every man is an animal'. If we consider the supposition of 'man', then it has to be confused, because the truth of 'Plato is an animal' *is not sufficient* for the truth of the universal, since obviously 'Plato is an animal' does not entail 'Every man is an animal' (even given that Plato is a man). So 'man' fails to meet the first condition for determinate supposition provided in the exposition. On the other hand, 'animal' fails to meet the second condition, since 'Every man is an animal' does not entail 'Every man is Plato', nor 'Every man is Socrates' (even given that Plato is an animal, and that so is Socrates), so the truth of these singulars is not required (i.e., not necessary) for the truth of the universal.

66. This is discussed in chapter 7.

4.3.6 The division of confused supposition into distributive and nondistributive

(1) Confused supposition is divided into distributive and nondistributive, [the latter of] which is customarily called merely confused supposition. (2) Distributive supposition is that in accordance with which from a common term any of its supposita can be inferred separately, or all of them at once conjunctively, in terms of a conjunctive proposition. For example, from 'Every man runs' it follows that therefore 'Socrates runs', [therefore 'Plato runs', or even that][67] therefore 'Socrates runs and Plato runs, . . .' and so on for the rest. (3) But merely confused supposition is that in accordance with which none of the singulars follows separately while retaining the other parts of the proposition, and neither do the singulars follow disjunctively, in terms of a disjunctive proposition, although perhaps they do follow by a proposition with a disjunct term.

This part, as well as the former one, has three sections, namely, a twofold division and a clarification of the members of the division. And it is obvious that distributive supposition differs from the other suppositions, for in its case a common term implies any of its singulars separately, whereas the other suppositions do not. Therefore, if the proposition is true, it has to be true for any suppositum, which is not required in the other cases of supposition. Merely confused supposition, on the other hand, differs from determinate supposition, because in the case of confused supposition the singulars cannot be inferred from the common term by means of a disjunctive proposition, whereas this can correctly be done with determinate supposition. For example, in the proposition 'Every man is an animal' the term 'animal' has merely confused supposition, and the inference 'Every man is an animal; therefore every man is this animal or every man is that animal . . .' (and so on for the rest) is not valid, for the antecedent is true and all the consequents are false. Hence these types of supposition are related to each other in such a manner that distributive supposition formally implies determinate supposition and even merely confused supposition, but neither of these latter implies distributive supposition by a formal consequence. In the common mode of confusion, however, determinate supposition formally implies [merely] confused supposition, for 'An animal is every man; therefore every man is an animal' is a valid inference. But [merely] confused supposition does not imply determinate supposition, unless the cause of confusion is removed, whence the inference 'Every man is an animal; therefore an animal is every man' is not valid, but removing the distributive sign, which was the cause of confusion, yields a valid inference,

67. This passage is deleted in the critical text.

such as 'Every man is an animal; therefore an animal is a man'. The reason why I said 'in the common mode of confusion' will be given later.[68]

4.3.7 The causes of distributive supposition

4.3.7.1 THE UNIVERSAL AFFIRMATIVE SIGN (IMMEDIATELY PRECEDING THE TERM)

There are many causes of the distributive confusion of a common term. For in the first way a universal affirmative sign distributes the term immediately following and construed with it. For example, in the proposition 'Every man is an animal', 'man' is distributed.

The seventh part, which is about the causes of confused distributive supposition, contains five sections, corresponding to five rules, of which the first concerns the universal affirmative sign. There are quite a lot and widely different affirmative universal signs; some are substantial and some belong to the categories of accidents. Some of the substantial ones distribute subjective parts, as for example, 'every', 'whichever', 'whoever', 'whosoever', and 'both', whereas others distribute integral parts, for example, 'whole'. Universal signs pertaining to the categories of accidents are 'however much', 'however many', 'however many times', 'whatever . . . like', 'whenever', 'wherever', 'always', 'perpetually', 'eternally', and furthermore, 'howsoever much', 'anyhow', 'anywhere', etc. We have to deal with these as briefly as is suitable.

The signs 'every' and 'whichever' are taken as equivalent. Concerning these there is first an easily dismissible doubt, namely, whether in the proposition 'Not every man runs' the term 'man' is distributed. And we have to say that it is not distributed. For the rule is that a negating negation, if it is followed by a common term that without it would be distributed, removes the distribution, and if it is followed by a common term that without it would not be distributed, then it distributes the term.

Next, the question arises whether in 'Every white man runs' it is 'man' or 'white' that is distributed. I say that neither 'man' nor 'white' separately but the whole complex term 'white man' is distributed here. For the rule is that a complex [phrase] consisting of a substantive name as a determinable and an adjectival name as a determination is placed in the proposition as a single

68. See 4.3.8.4.

term, and so the whole is distributed together, and no part of it is distributed separately, whether the substantive precedes the adjective or follows it.

But then it is asked whether in 'Every man is white' the whole [phrase] 'man white' is distributed. And I say that it is not, but only 'man' is, for [here] there is no construction [*complexio*] of a determinable with its determination but of the subject with the predicate by the mediation of the copula.

There is also a question about 'Any donkey of a man runs', namely, as to what is distributed here, and also about 'Any man's-donkey runs' ['Anything that is a donkey of some man or another runs'], and about 'A man's any donkey runs' and 'Any-man's donkey runs' ['Of any man some donkey or another runs'].[69]

Concerning the first two and their like, namely, [propositions] in which the sign precedes both the [name] in the nominative and that in the oblique case, while the sign is in the nominative case and not in the case of the [name] in the oblique case, I say that the whole complex term consisting of the name in the nominative case and that in the oblique case is distributed as one, and neither of these is distributed separately, just as was said concerning the substantive and the adjective. For the name in the oblique case is related to the name in the nominative case as the determination is to the determinable, just as with the adjective and the substantive, unless some syncategorematic terms intervene, or precede, which make a difference, as is going to be discussed soon.

But concerning the third proposition, 'A man's any donkey runs', I say that the word 'man's' is not distributed at all and remains in its determinate acceptation. But the word 'donkey' is distributed, not absolutely, however, but restricted by the word 'man's' taken determinately. And so if we need to make a subsumption under this distribution in a syllogism, then we have to syllogize as follows: 'A man's any donkey runs; Brownie is that man's donkey; therefore Brownie runs'.

As to the fourth proposition, 'Any-man's donkey runs', I say that the name in the nominative case is not distributed, but only 'man's', for the sign is not in the case of the name in the nominative, but in the case of that in the oblique case.

Next, it seems to me that the distributive signs 'whoever', 'whichever', and even 'whatever' and 'whatsoever' are equivalent to one another and are often taken equivalently with 'every', and so no more need be said about them. But sometimes they are taken as antecedents to explicit or implicit relative pronouns, as in 'Whatever runs moves' or in 'Whatever runs, that moves'.

69. *Quaeritur etiam de ista quilibet asinus hominis currit quid ibi distribuatur, et similiter de ista quilibet hominis asinus currit, et de ista hominis quilibet asinus currit, et de ista cujuslibet hominis asinus currit.* See n. 30 above.

And then there is a doubt as to what is distributed here. I reply that [the sign] is to be resolved into an adjective and a substantive: thus 'whatever' becomes 'whichever thing', so that 'Whatever runs [moves]' [becomes] 'Whichever thing runs that [thing] moves'. And it is obvious that the word 'thing' is distributed, although not in itself, but as restricted by 'runs'. So 'Whichever thing (i.e., whatever thing) runs that [thing] moves' is equivalent to 'Every thing that runs moves'; and here the whole [phrase] 'thing that runs' is distributed as a unit. And I here say 'equivalent' with respect to distribution, because in both cases 'thing' is distributed only for the supposita to which the predicate 'runs' applies. But there is a difference in cases of ampliation, and for this reason in the *Sophismata* it was said that 'Every thing that will be is' should be conceded, for 'thing' is restricted, because it is construed with 'is', whereas 'Whichever thing will be, that is' is to be denied, for 'thing' is ampliated, because it is construed with 'will be'.[70] So this is the mode of distribution of the name 'whichever' or 'whatever', when it is taken as an antecedent to a relative pronoun. But if it is said absolutely that whichever man is an animal, then 'whichever and 'every' are equivalent.

About the term 'both' we say that it distributes the term following it over two [things], either indicated by demonstrative pronouns, as when we say 'both of these' or 'both of these men', or determined by anaphora [*per relationem*], as when we say: 'a horse and a donkey are white and both of them run'.

Now there is also a question concerning the distributive sign 'whole', as in 'The whole [of] Socrates is less than Socrates' or 'The whole man is in the house'. What is distributed here by 'whole'? We have to say that we often take the name 'whole' categorematically as being equivalent to the expression 'having parts', and this sense is irrelevant here. Sometimes, however, it is taken syncategorematically, and then saying 'whole' is equivalent to saying 'any part'. Therefore we should not think that the word 'whole' in the previous expressions is purely syncategorematic; rather, it implies in itself the syncategorematic term 'any' and the categorematic term 'part'. Therefore, when I say 'The whole of Socrates is less than Socrates', it has to be expounded, in order to show what is distributed. For I say that [here] the whole complex [phrase] 'part of Socrates' is distributed as one term. And, in the same way, in saying 'whole man', the complex [phrase] 'part of a man' [i.e., 'human part'] is distributed.

It should also be known that, by virtue of its proper meaning [*de proprietate sermonis*], 'whole man' [*totus homo*] is expounded differently from 'man as a whole' [*homo totus*]: 'whole man' is [expounded as] 'any part of a man' [i.e.,

70. *Sophismata,* chap. 5, Eighth sophism.

'any human part'], whereas 'a man as a whole' [is expounded as] 'of a man, any part'. These are quite different, for if Socrates is in this house and Plato outside, then 'Any part of a man [i.e., any human part] is in this house' is false, whereas 'Of a man, any part is in this house' is true. There are also other interpretations of the name 'whole', of which we shall have to say more in the *Sophismata.*

Now we have to discuss the distributive signs 'everywhere' and 'always'. And I say that these words imply a distributing syncategorematic term and a distributed categorematic term. For 'everywhere' is equivalent to 'in every place', and 'always' is equivalent to 'at every time', or, perhaps, to the whole [phrase] 'at every present, past or future time', as I said earlier. And the same holds for 'perpetually' and 'eternally', in their own ways.

But concerning 'wherever' and 'whenever' we have to say the same, correspondingly, as was said concerning 'whichever'. For if we take 'whenever' for 'always', and 'wherever' for 'everywhere', then we have already dealt with them. But these names appear to be imposed in order to be put forward as antecedents to their relative pronouns, 'there' and 'then'. For example, 'Whenever there is a lunar eclipse, then there is an interposition of the Earth between the sun and the moon', and 'Wherever is a man, there is an animal'. There is a question, therefore, about what is distributed here. And I reply that this becomes obvious by analysis. For 'whenever' is equivalent to 'at whichever time' and 'wherever' is equivalent to 'in whichever place'. Therefore it is the terms 'time' and 'place' that are distributed, not absolutely, but restricted by what they are added to, as in the previous examples; thus 'time' is distributed only for the times at which there are lunar eclipses, and 'place' only for places in which there are men.

We have to say the same concerning 'howsoever' [*qualiscumque*] and 'however much' [*quantuscumque*]. For they distribute the terms 'quality' and 'quantity', restricted by what they are added to, and are taken as antecedents to their relative pronouns, 'such' and 'that much'. For example, the sense of 'Howsoever is Socrates, such is Plato' is: 'By whatever quality Socrates is such-and-so, by such a quality Plato is also such-and-so'; so 'quality' is distributed only for the qualities by which Socrates is such. In the same way, in 'However much is Socrates that much is Plato', 'quantity' is distributed for the quantities by which Socrates is this much; for its sense is that of 'By whatever quantity Socrates is this much, by that amount Plato is this much'. Thus, if I say 'However many men there are, that many donkeys there are' [i.e., 'There are as many donkeys as there are men, no matter how many'], here the term 'number' is distributed, restricted to the numbers by which men are of some number; and it is equivalent to 'By whatever number men are of some number, by that number are donkeys of some number'. Also, if I say 'However many

times Socrates sleeps, that many times he dreams', here the term 'number of times' is distributed, restricted to the number of times when he sleeps. And this is equivalent to 'By whatever number of times Socrates sleeps, by that number of times he dreams'. Since the term 'number of times' [*vices*] signifies the number of interrupted acts, the whole term 'the number of interrupted periods of sleep by which Socrates sleeps' is distributed. So this is equivalent to 'By whatever number of interrupted periods of sleep Socrates sleeps, by that number of interrupted periods of dream he dreams' [i.e., 'The number of periods Socrates sleeps equals the number of periods he dreams']. In the same manner, if I say: 'Howsoever Socrates acts, so does Plato', or 'Howsoever Socrates is related to Plato, so is John related to Robert', here the term 'way' is distributed, restricted to the ways in which Socrates acts or in which Socrates is somehow related to Plato. And so the senses [of the above propositions] are 'In whatever way Socrates acts, so does Plato act' and 'In whatever way Socrates is related to Plato, so is John related to Robert'. The term 'however' [*qualitercumque*] seems to me to be equivalent to 'howsoever' [*quomodocumque*]. And we should realize that just as sometimes we take the term 'whatever' without any relation to a subsequent relative pronoun, we can, perhaps, do the same with 'however much', 'however', 'wherever', etc. And if Socrates were said to be however much, or howsoever, this would signify that he would by every quantity be of some quantity and that he would by every quality be somehow; and it is obvious what is distributed here, namely, 'quantity' and 'quality'. But concerning 'anyhow' [*qualelibet*] some people say that it has to be expounded as 'In any species of quality having some quality'; and then it is manifest what is distributed here, namely, the whole [phrase] 'species of quality'.

4.3.7.2 NEGATING NEGATION

Second, a negating negation distributes every common term following it that without it would not be distributed and does not distribute anything that precedes it.

I speak here about 'negating negation' as opposed to infinitizing negation, the latter of which only distributes the term that it infinitizes.[71] So if we say 'Not a man is white', and we take the negation negatively, then 'man' and 'white' are distributed, and also the verb 'is', as to the time consignified by

71. See n. 11 above.

it. And we should note that the distribution of negative universal signs is reduced to this mode of this distribution, because a negative universal sign is nothing else but a word that implies in itself a negation with a particular affirmative sign. For 'no-one' is equivalent to 'not one', 'nothing' to 'not something', 'neither' to 'not either', 'never' to 'not ever', etc. So such a sign by virtue of this negation distributes all subsequent terms that would not be distributed if the negation implied with the particular sign were removed.

Note also that if the proposition is hypothetical,[72] then a negation occurring in the first categorical [component] has no effect on the second categorical, unless it is prefixed to the whole proposition, so that it is understood to impinge upon the whole hypothetical. For example, in 'A man does not run and a horse is white', the terms 'horse' and 'white' are not distributed. But if I were to say 'Not a man runs and a horse is white', so that the negation would cover the whole hypothetical, then the sense of the proposition would be that it is not the case that a man runs and a horse is white, and then every part would be distributed in it, for it would contradict the conjunction 'A man runs and a horse is white', and so it would be equivalent to the disjunction 'No man runs or no horse is white', in which every part is distributed.

But then there arises a query as to whether in the proposition 'Socrates is not where a man is' the term 'man' is distributed. And I say that that proposition can be taken as a categorical, and its sense is 'Socrates is not where a man is', that is to say, 'Socrates is not a being where a man is' and the whole [phrase] 'being where a man is' is the predicate [term] composed of a determinable and its determination. For the name 'being' functions here as the determinable and the whole [phrase] 'where a man is' as its determination. And then the whole is distributed and the proposition would be converted into 'No being where a man is is Socrates'. But it can also be taken as a hypothetical, and then it would be equivalent to a conjunction, as was said elsewhere, for it would be equivalent to 'Socrates is not somewhere and there is a man there'; and then 'man' is not distributed.

Furthermore, it is queried whether in 'An animal that is not a man is a substance' [the term] 'substance' is distributed. And we have to say that it is not [distributed]. For the negation does not negate the whole proposition, in which 'substance' is the predicate, and the whole [phrase] 'animal that is not a man' is the subject, and the 'is' put in between them is the copula. But 'man' is distributed, for even if the part of this proposition 'that is not a man' is not itself a proposition, for it is a part of a proposition, it is, nevertheless, similar

72. Of course, 'hypothetical', in accordance with common medieval usage, refers here to any sort of compound proposition, be it a conjunction, a disjunction, or a conditional. See Buridan's explanation of this usage in 1.7.

to a proposition with respect to the suppositions and distributions of terms. For the terms of an expression that is a part of a proposition and that would be a proposition if it were taken on its own supposit and appellate in the same way as they would if [the expression] were taken as a proposition on its own.

4.3.7.3 INFINITIZING NEGATION

> In the third way a common term is distributed by a negation infinitizing it, as when I say 'An animal is a non-man', for it follows that 'therefore, an animal is [a] non-Socrates' and that 'therefore, an animal is [a] non-Plato', and so on for the rest. Similarly, '[A] non-man is an animal; therefore [a] non-Socrates is an animal' and 'therefore [a] non-Plato is an animal' follows, although the negation is one that infinitizes.

Concerning this mode [of distribution] the query is raised as to how 'man' occurs in 'No non-man runs' and 'Every non-man runs'. I say that in the first, 'man' is no longer distributed, for the preceding negation removes the distribution of the infinitizing negation. Therefore, the inference 'No non-man runs; therefore, no non-Socrates runs' is not valid. We should say, however, that the whole infinite term, namely, 'non-man', is distributed; whence we can validly infer 'No non-man runs; therefore, this does not run', pointing to anything that is not a man. But concerning 'Every non-man runs' we should say similarly that the term 'non-man' is distributed, whereas 'man' is no longer distributed, by reason of the traditionally posited rule: 'whatever mobilizes the immobilized immobilizes the mobilized', i.e., that which has the power to distribute an undistributed term removes the distribution of a distributed one. Now, indeed, in '[A] non-man runs' the word 'man' is distributed and the term 'non-man' is not distributed. Therefore, adding a universal sign, which has the power to distribute, 'man' is no longer distributed and 'non-man' is distributed, and so the inference 'Every non-man runs; therefore, every non-Socrates runs' is not valid.

4.3.7.4 COMPARISON

> In the fourth way, a common term following and terminating a comparison is distributed by a comparison in such a way that the name of comparative grade distributes the name in the ablative case following upon

it and terminating the comparison.[73] For example, in 'greater than-man'[74] [*maior homine*], 'man' [*homine,* i.e., *homo* in the ablative case] is distributed. Similarly, the same name, with the mediation of the word 'than', distributes the name in the nominative case, terminating the comparison. For example, in 'greater than man' [*maior quam homo*] 'man' is distributed. Similarly, in a comparison with a name of the positive grade, with the mediation of the word 'as' [*sicut*] taken comparatively, the name in the nominative case terminating the comparison is distributed. For example, in 'Socrates is as big as some horse' [*Socrates est ita magnus sicut aliquis equus*], the term 'horse' or 'some horse' [*aliquis equus*] is distributed. Again, the superlative grade has a special mode of distribution, for it distributes the complex [phrase consisting] of its substantive and the pronoun of diversity[75] added to it, which is clear by its exposition: for something is called the first being, because it is prior to every other being or because no other being is prior to it, and a man is called the strongest either because he is stronger than every other man or because no other man is stronger than he.

Concerning this part we should briefly note that if the ablative preceded the comparative, then it would not be distributed. For example, if I say 'Socrates is than-a-man stronger' [*Socrates est homine fortior*], 'man' [*homine*] is not distributed. But what shall we say about 'A horse is stronger than every man'? Is 'man' distributed? I say that it is not [distributed] because of the rule mentioned in the previous part, namely, 'whatever mobilizes the immobilized immobilizes the mobilized'. For there is a double distribution concerning 'man', and so one removes what the other would produce if it were alone. Therefore '[A] horse is stronger than-man' [*equus est fortior homine*] is equivalent to '[A] horse is than-every-man stronger' [*equus est omni homine fortior*], and similarly, '[A] horse is stronger than-every-man' [*equus est fortior omni homine*] to '[A] horse is than-a-man stronger' [*equus est homine fortior*]. And if something more is to be said concerning this part, that will be said in the *Sophismata.*

73. In Latin grammar, adjectives are distinguished with respect to their grades. 'White' is an example of an adjective of *positive* grade, 'whiter' is an example of an adjective of *comparative* grade, and 'whitest' is an example of an adjective of *superlative* grade.

74. In English we have a comparative construction only with 'than', which strictly corresponds to the Latin construction with *quam.* Accordingly, to indicate the other possible Latin construction, I have to use the artificial hyphenation in the translation.

75. That is, the pronoun *aliud* (other).

4.3.7.5 WORDS IMPLYING NEGATION

> In the fifth way distribution is brought about by several words that imply negations in themselves or in their exponents, as for example privative names and pronouns of diversity, or the verbs 'begin' and 'cease', or the words 'without', 'besides', 'only', and several others, which we shall discuss in particular in the *Sophismata.*

Concerning this part note only that if the proposition in which such distributives occur needs to be expounded by other propositions or by another proposition because of its obscurity, a term can be said to have such supposition or suppositions that it is found to have in its exponent or exponents.

4.3.8 The causes of nondistributive supposition

4.3.8.1 THE UNIVERSAL AFFIRMATIVE SIGN (NOT IMMEDIATELY PRECEDING THE TERM)

> Similarly, there are many causes of nondistributive confusion. The first obtains when the universal affirmative sign confuses a common term following upon it, but not immediately, as when in the proposition 'Every man is an animal' the term 'animal' supposits by nondistributive confused supposition. And this is clear because the inference 'Every man is an animal; therefore every man is Socrates' is not valid, so ['animal'] does not supposit distributively. Similarly, [the inference] is not valid with the disjunctive proposition 'therefore, every man is this animal or every man is that animal or . . .' and so on for the other animals, because the antecedent is true and the consequent is false, so ['animal'] does not supposit determinately either; therefore, it supposits in the third way, i.e., with merely confused supposition.

The last part of this chapter, which is about the causes of nondistributive confusion, has several sections, just as did the previous one, corresponding to several rules.

In connection with the first rule that has just been stated it is immediately queried how 'animal' supposits in the proposition '[One] seeing every donkey is an animal', for it appears to have merely confused supposition according to the above rule. Solution: we have to say that it supposits determinately and not confusedly. Therefore we should add to the rule that if the

term not immediately following the sign is to be confused by the sign, then it should be construed with some [other] term confused by that sign. For example, in 'Every-man's donkey is running' first the term 'man's', which follows it immediately, is confused distributively by the sign 'every'; then the term 'donkey', which is construed with the already confused term 'man's', is confused nondistributively; then also the verb 'is' is confused nondistributively with respect to the consignified time, because it is construed with the term 'donkey'; finally also the term 'running', which is construed with 'donkey' and with 'is', [is confused nondistributively]. But when we said '[One] seeing every donkey is an animal', the term 'animal' was not construed with a previously confused term, for it was not construed with the term 'donkey', which was previously confused. Thus, if I say 'A donkey of every man is running', here neither the verb 'is' nor the predicate term 'running' is confused, for neither of them has a connection in the grammatical construction with the previously confused term 'man'.

But then you will ask: "What should I then say about 'Every man a donkey is seeing' [*Omnem hominem asinus est videns*, i.e., 'Every man is seen by a donkey or another']? Is 'donkey' confused here?" And I say yes, because 'seeing' is construed with 'man', which was confused first, and also 'donkey' and the verb 'is' are construed with 'seeing', and so they are confused nondistributively. And for this reason the general rule is that if the universal sign precedes the rest of the proposition, then it distributes something and confuses the rest nondistributively, if the rest has connection with what is distributed.

There is also a doubt concerning 'Any animal of a king is a horse' [*quodlibet regis animal est equus*], assuming that no king has any animal other than a horse (for then the proposition is true), and it is asked how 'king', 'animal', and 'horse' stand here.[76] And I say that the whole [phrase] 'animal of a king' is distributed, as was said earlier, but neither of its parts is distributed, neither 'animal', nor '[of a] king'; rather, they both are held confusedly and nondistributively. For we cannot descend to some determinate suppositum, because if under 'animal' we descended to a donkey then the proposition would be false, and if under 'king' we descended to a king who lost all his animals, then the proposition again would be false. So it is obvious that neither part of the distributed complex [term] is distributed, but it is held merely confusedly.

Next there is also a doubt concerning 'Every matter and form are a composite'. I say that 'form' supposits [here] merely confusedly, for one cannot [inferentially] descend to some suppositum, nor to all of them in a disjunctive proposition. And the same would be the case with any such proposition,

76. Obviously, it would be rather odd to translate *rex* as 'the king' in this context, where Buridan also makes a claim concerning all kings. See n. 33 above.

namely, any in which the conjunctive subject is taken collectively. But if it is taken dividedly, as in 'Every man and [a] donkey run', then 'donkey' stands determinately, for the reason that such a proposition, as was said, is to be resolved into the hypothetical 'Every man runs and a donkey runs', where 'donkey' supposits determinately.

But as far as 'Every man or [a] donkey runs' is concerned, we have already said that in one way it can be understood so that the distribution affects only 'man', and then it is again to be resolved into the hypothetical 'Every man runs or a donkey runs', where 'donkey' supposits determinately, and so in the same way as it supposited in the first [proposition]. But it may be understood in another way so that the distribution affects the whole subject, and then the whole [phrase] 'man or donkey' is distributed for everything that is a man or a donkey; and since every man is a man or a donkey, and every donkey is a man or a donkey, it is distributed for every man and every donkey, and so the whole is held distributively.

4.3.8.2 TWO PRECEDING DISTRIBUTIVE PARTS OF SPEECH

In the second way, a common term is confused nondistributively by two distributive [parts of speech] preceding it, either of which would distribute it without the other, as when I say 'Every non-man runs',[77] or even 'No non-man runs', the term 'man' is held confusedly and nondistributively. In the same way, if I say 'No man is no man' or 'No man is every

77. In applying Buridan's "descent-tests" for the different kinds of supposition, we must not forget that those tests always require that in replacing the singulars falling under the common term whose supposition we are testing, *the rest of the propositional context must remain unchanged,* except that we have to remove the sign of quantity determining the term in question. So, e.g., from 'Every non-man runs', testing the supposition of 'man' and not that of 'non-man', we should descend to 'Every non-Socrates runs' and to 'Every non-Plato runs', and so on for all singulars falling under 'man'. Clearly, since we cannot descend to any of these by joining them either in a disjunctive or in a conjunctive proposition, though we certainly *can* replace 'man' in the original by a disjunction of the names of every man (in 'Every non-[Socrates or Plato, etc.] runs'), 'man' has to have merely confused supposition here. To be sure, the term 'non-man' has distributive confusion in the original, as can be seen by descending to 'This non-man runs and that non-man runs' and so on for all nonmen. (Obviously, in this descent we had to remove the universal sign that determined the whole subject 'non-man'.)

man', the term 'man' put forth in the predicate is taken merely confusedly.

From this rule the situation is clear concerning pronouns of diversity and the verb 'differ', which are taken to distribute the subsequent terms in the ablative case.[78] For example, if I say 'B differs from a man', or 'B is other than (or diverse from) a man', then the term 'man' is distributed.[79] Therefore, if a negating negation were prefixed, then 'man' would remain merely confused, as in saying 'A does not differ from a man' or 'A is not other than a man', and this would be the case also if one were to say 'A differs from every man'; here 'man' would be taken merely confusedly.[80]

78. Where Latin requires the ablative case in this context, English demands the addition of the preposition 'from'.

79. We must keep in mind here that the Latin equivalent of 'differs' for Buridan has the import that the suppositum (or the required number of supposita) of the subject is (are) non-identical with any of the supposita of the predicate term, while it also requires that both terms have some supposita (given the fact that the verb 'differs' is affirmative). Thus, e.g., 'Every man differs from a horse' is true because both 'man' and 'horse' supposit for something and for every suppositum of the term 'man' it holds that is it non-identical with any of the supposita of the term 'horse'. By contrast, 'Some man differs from an animal' is false because, although 'man' and 'animal' supposit for something, it does not hold for some suppositum of the term 'man' that it is non-identical with any suppositum of the term 'animal' (given the fact that every man is identical with an animal, namely, himself). Furthermore, 'Some man differs from a chimera' is also false, because 'chimera' does not supposit for anything, and so 'Some man does not differ from a chimera' is true for the same reason. Yet, from this we may not infer that 'Some man is [identical with] a chimera', since this is also false, again for the same reason; and hence its contradictory negation 'Some man is not [identical with] a chimera' is true (since a negative proposition a term of which is empty is true).

80. Frankly, I do not see why we could not say that 'man' stands determinately in these cases. Apparently, the relevant descents to the singulars by means of disjunctive propositions are valid. For example, *A non differt ab homine; ergo, A non differt ab isto homine vel A non differt ab illo homine . . . et sic de singulis* ('A does not differ from a man; therefore, A does not differ from this man or A does not differ from that man,' etc.) seems to be valid. Perhaps a simple intuitive formalization can help in seeing this point. In accordance with what Buridan just said about the import of *differt* (differs), namely, that it distributes the predicate term following it, he certainly accepts the following: $A \neq H \leftrightarrow A \neq H_1 \,\&\, A \neq H_2 \ldots$, i.e., that A differs from a man is equivalent to the claim that A differs from this man and A differs from that man, etc. But then the negation of the left-hand side of this equivalence should be equivalent to the negation of the right-hand side: $\sim(A \neq H) \leftrightarrow \sim(A \neq H_1 \,\&\, A \neq H_2 \ldots)$, and so we should get $\sim(A \neq H) \leftrightarrow \sim(A \neq H_1) \vee \sim(A \neq H_2) \ldots$, i.e., that A does not differ from a man should entail that A does not differ from this man, or A does not differ from that man, . . . etc. To be sure, since determinate supposition implies merely confused supposition

Thus, if one said: 'No man sees every donkey', then 'donkey' would be taken merely confusedly, but if one said: 'Every man sees every donkey', then 'donkey' would be distributed, for although two distributive signs precede it, the rule does not apply here, since the first sign without the second would not distribute 'donkey'.

But it appears to me that distribution effected by comparison should be an exception to this rule. For example, if I say 'A horse is greater than a man', then the term 'man' is distributed here; but if I add a [universal] sign, saying that a horse is greater than every man, it is true that the distribution is removed; nevertheless, the confusion does not remain [either], rather, 'man' supposits determinately. I prove this from the fact that it is possible to descend to the supposita disjunctively by means of a disjunctive proposition. For example, if I say 'A horse is greater than every man', then it is necessary that that horse is greater than the smallest man, and then, assuming that that man is Socrates, it will be true that it is greater than Socrates or that it is greater than Plato, and so on for the others. So if you asked: 'Whence arises this variation? Why does the rule hold in other cases rather than in this?', then I would say that this is because what exceeds many things or some one of many things has to exceed also the smallest of these, and if it exceeds all of them, then it also has to exceed the greatest of them; but if every man is an animal, it is not necessary that every man should be the smallest animal, nor that every man should be the greatest animal, and so on for the rest, but only that this should be the one of these and that should be the other.

Again, we have to except from this rule two negations taken together, relating in the same way to what follows upon them. For these only cancel each other out, and so the supposition remains the same, as it would be if the negations were removed. Thus, in 'Not: no man runs' or in 'Socrates does not see no man', 'man' supposits determinately.

(but not vice versa), as he remarked earlier, Buridan can clearly claim also merely confused supposition here, but apparently he cannot say that it is *only* merely confused supposition that we can attribute to *homo* (man) in these cases. On the other hand, Buridan may have had some different interpretation in mind in this case that I have simply failed to grasp; or he was simply wrong, but I have every reason to doubt that. So, I am afraid at this point I have to leave the problem to someone smarter than I.

4.3.8.3 CERTAIN SPECIAL TERMS

Further, in the third way, there are certain special terms that confuse the common terms following them but without distribution, namely, the terms that answer the question 'How many times?', for example, 'three times', 'four times', etc., as in 'Today I ate bread three times'. Again, it is also asserted that the conjunction of terms from the categories of time and place have the ability to confuse in this way, as in 'Today and yesterday I drank wine' or even in 'Bread is sold in Paris and in Rome'.

It appears to me that confusions of this kind arise because such propositions can be resolved into conjunctions whose categorical [members] all have the same predicate term, but one of the categoricals is verified for one suppositum of that same term, whereas another is verified for another. For example, 'I ate bread three times' [is true], because I ate bread on one occasion, and I ate bread on a second occasion, and I ate bread on a third occasion, although one [piece of bread] on the first, another on the second, and yet another on the third occasion. Similarly, 'Today and yesterday I drank wine' [is true], because I drank wine today, and I drank wine yesterday, although it was not the same [wine]. And similarly bread is sold in Paris and in Rome, because bread is sold in Paris and bread is sold in Rome, but not the same [bread]. Therefore, if a similar situation is found in other cases, the same kind of supposition is to be assigned.

Some people also have wanted to assert that in an exceptive proposition a common term has merely confused supposition, e.g., that in 'Every man except Socrates runs', the term 'man' has merely confused supposition, for it is not possible to descend inferentially to some suppositum, since [from 'Every man except Socrates runs'] we cannot infer 'therefore, Plato except Socrates runs', for the proposition would be inappropriate and ungrammatical. But I say that 'man' is distributed here, although not absolutely but by the exception restricted to men other than Socrates in such a fashion that it is the following whole, namely, 'man other than Socrates', that is distributed. This is obvious, since the proposition in question is analyzed into the hypothetical 'Socrates does not run and every man other than Socrates runs', and thence we can obviously descend.

4.3.8.4 THE MODE OF CONFUSION PRODUCED BY VERBS SUCH AS 'KNOW' AND 'UNDERSTAND'

> In the fourth way the verbs 'know' [*scio*], 'recognize' [*cognosco*], 'understand' [*intelligo*], and many others, about which we said more in the *Sophismata,* as well as their participles, confuse without distribution the terms following them, which function as their direct objects [*terminantes transitum eorum*].[81] Thus when I say 'I recognize a triangle', from this it does not follow that 'therefore, I recognize an isosceles or I recognize an equilateral triangle', and so on for the rest. In the same way, if I owe you a horse, it does not follow that therefore 'I owe you Brownie or I owe you Tawny', and so on for the rest.

It appears to me that this mode of confusion is quite different from the aforementioned modes, though we are speaking about 'confusion without distribution' in both cases. For although in the previous modes it was not possible to descend inferentially to the supposita in terms of a disjunctive proposition, it was nevertheless possible to descend inferentially in terms of a categorical proposition with a disjunctive term. For example, although the inference 'Every man is an animal; therefore every man is this animal or every man is that animal . . . , etc.', is not valid, the following is: 'Every man is an animal; therefore every man is this animal or that animal . . . , etc.'; for this consequent is true as well as the antecedent, as is obvious by induction. But in the present mode of confusion it is not possible to descend to the supposita in terms of either a disjunctive proposition or a categorical with a disjunctive term. The reason for this is that such verbs make the terms following them appellate the concepts [*rationes*] according to which they were imposed to signify. For example, Aristotle correctly drew a distinction between the two propositions 'The one approaching I know' [*Venientem cognosco*] and 'I know the one approaching' [*Cognosco venientem*]. For let us assume the case that you know your father very well according to the concept according to which he is called your father, but you do not know him according to the concept according to which he is called the one approaching, for although he is the one who visits you, you know nothing about his visit. Then in this case the proposition 'You know the one approaching' is false, and so the inference 'You know your father and he is the one approaching; therefore, you know the one approaching' is not valid. But the proposition 'The one approaching you know'

81. For example, in the sentence *Debeo tibi equum* (I owe you a horse), the direct object of the transitive verb *debeo* ([I] owe) is *equum* (horse), whereas *tibi* (you) is only the indirect object.

is true, for it follows that if your father you know and your father is the one approaching, then the one approaching you know, by an expository syllogism. So a term before the verb does not appellate its concept in the way it does after the verb. Therefore, under whatever concept you know Socrates, if Socrates is a man, and an animal, and a father, and the one approaching, then it follows that it is a man, and an animal, and a father, and the one approaching that you know.

From this another great difference between this mode of confusion and the earlier ones should be clear. For in the other modes of nondistributive confusion, the inference from a confused to a determinate term is not valid, except by removing the cause of the confusion. In this mode of confusion, however, such an inference is valid, for example, 'I know a triangle; therefore, a triangle I know'. Indeed, even if [something that is] a triangle I knew by another concept, it would still follow that a triangle I would know.

Also, conversely, in this mode of nondistributive confusion the determinate does not follow from the confused as it does in the others. For the inference 'A triangle I know; therefore, I know a triangle' is not valid, but 'An animal is every man; therefore, every man is an animal' is.

There is still another major difference between the said modes of nondistributive confusion. For in the present mode of confusion, from the merely confused term there follows the same term, but distributed by changing its position from [occurring] after [the verb] to [occurring] before [the verb], and this does not hold in the other modes. For the inference 'I know a triangle; therefore, every triangle I know' is valid. For if I know a triangle, then I have the concept from which the name 'triangle' is imposed, and by that concept I conceive all triangles indifferently, no more the one than the other; and so every triangle I know.

But the converse inference, from the distributed to the nondistributed, is not valid. For the inference 'Every triangle I know; therefore I know every triangle' is not valid, since it is possible that I have knowledge of every triangle according to the common concept of shape, or quality, or being, but I do not have the proper concept of triangle, and so I do not know a triangle.

Again, it appears that even if the accusative [grammatical object] of these verbs is immediately preceded by a universal affirmative sign, it is still not held distributively so that a descent would be possible. For the inference 'I know every triangle; therefore I know an isosceles' is not valid, although an isosceles is a triangle. For I can have the general concept of triangle in my mind without having either specific or individual concepts [of triangles], and then I know every triangle, but I do not know an isosceles or an equilateral triangle.

These are the things to be said about the special conditions of these verbs

and the special mode of confusion of the accusatives which follow them [i.e., their grammatical objects]. They seem to arise entirely from the fact that these accusatives somehow appear to participate in material supposition. For they appellate their concepts, although they do not supposit for them, and so it is not possible to descend to the supposita of other concepts. They appellate these concepts in this way because we think of things by means of those concepts, but it is not in this way, i.e., not by means of a concept, that fire heats water or that a stone hits the ground. And what I said about the accusatives following the active verbs I would say about the nominatives following passive verbs, as when I say, 'By Socrates is understood every triangle', this does not imply that 'therefore, by him is understood an isosceles'.

4.4 Chapter 4: On the supposition and acceptation of relative terms

4.4.1 The aim of the chapter

> After the general consideration of supposition and ways of taking of terms in propositions there remains the great difficulty of the supposition and acceptation of relative terms. Therefore, now we shall have to deal with them in particular.

The fourth chapter is about the supposition of relative terms in particular. The phrase 'relative term' is not taken here for the terms that we say are in the category of relation, such as 'father', 'son', 'master', or 'slave', but in the way grammarians call something a relative [term], because it recalls a thing brought up or mentioned earlier, such as the pronouns 'it', 'that', 'itself', 'its', and the names 'other', 'same', 'that much', 'such', etc.

This chapter has nine principal parts. The first puts forward the aim of the chapter; the second lists and distinguishes various kinds of relative terms; the third gives one general rule concerning what things a relative recalls as its antecedent; the fourth is another rule, namely, that a relative supposits in the same way as its antecedent; the fifth is about the relative terms 'same' and 'that' in particular; the sixth is the relative term 'itself'; the seventh is about the relative term 'its'; the eighth is about the relative terms 'that much', 'such', and the like; and the ninth is about the relative terms 'other' and 'different'.

The first part is obvious except that we have to remark on why we are speaking about supposition and acceptation here. The reason for this is that the acceptation of a term for something in a proposition is broader than the supposition of a term for something. For we said earlier that, properly speaking, nothing is said to supposit except the subject or the predicate. For this reason an oblique term does not supposit, as 'man' in 'Socrates sees a man' [*Socrates est videns hominem*] does not supposit, for nothing is *hominem;* but *hominem* is appropriately taken for [*accipitur*] a man [*homo*] whom Socrates sees; and it can in this acceptation be distributed, confused without distribution, taken determinately, or even taken personally or materially. To be sure, sometimes we use the name 'supposition' broadly, in such a manner that it is treated as synonymous with the name 'acceptation'; and it is evident that in the preceding chapter we were speaking about supposition not only properly, but also in this way, i.e., broadly, and so shall we speak about it in the present chapter, too.

4.4.2 The division of relative terms

(1) There is a great diversity of relative terms. For some are said to be relative terms of substance; others are relative terms of the other categories, as for example, 'such' and 'so much'. (2) Some relative terms of substance are relative terms of identity, whereas some are relative terms of diversity, for example, 'other' and 'different'. (3) Some relative terms of identity are called reciprocal, such as 'itself', others nonreciprocal, such as 'it' and 'that'.

In this second part three divisions of relative terms are put forward. (1) As regards the first, it should be realized that a relative term is not called [a relative term] 'of substance' for the reason that its antecedent has to be a term of the category of substance; on the contrary, its antecedent can be equally of any other category, as in 'A white [thing] is a wall and it is seen', 'A whiteness is in a wall and it is seen', 'A six-foot-tall [thing] sees itself', 'My master rides his horse'. Rather, it is called a relative term of substance, because it does not signify what it refers to, or that which it is taken for, to be of some quality, to be of some quantity, or to be somewhere, and so on for the rest of accidental predications, but only to be something; relative terms of accidents, on the other hand, signify something's being of some quality or being of some quantity or being somewhere, and so forth.

(2) Concerning the second division it is obvious that a relative term of identity is taken for something for which its antecedent was taken, and a relative term of diversity is not thus taken but rather for something else.

(3) As to the third division it is clear that 'itself' ['himself', 'herself'] signifies the reversion of the action into that from which it proceeds. For example, if we say that Socrates loves himself, is loved by himself, is a lover of himself, or acquires something for himself, this signifies that the act of love or acquisition belongs to Socrates as to someone who loves [and whom he loves], as to someone [who acquires and] for whom he acquires [something], or even as to someone who is loved [and by whom he is loved], which is not the case with the other relative terms. Other divisions of relative terms can also be posited; for example, they are sometimes in the nominative, sometimes in the oblique cases, as 'it', 'its', 'that', 'of that', and this makes a great deal of difference, as we shall see.

4.4.3 A common rule concerning relative terms of identity

> The universal rule is that a relative term of identity need not supposit or stand in a proposition for all the things that its antecedent supposits or stands for. On the contrary, the relative term refers back to its antecedent only with respect to those of the antecedent's supposita for which the categorical proposition in which the antecedent occurred was verified; hence, the proposition 'An animal is a man and he is a donkey' is false.

From this rule it is immediately evident that a relative term cannot be more ampliated than its antecedent is ampliated. Thus, if I say 'A man runs and he disputed', the relative term 'he' supposits only for present[ly existing men], just as 'man' does. But [the relative term] can be more restricted, for if I say 'A man runs and he is white', then the antecedent 'man' supposits for all men, although indefinitely, but the relative term 'he' does not so supposit for all men, but only for those for which the proposition 'A man runs' is true, and if it were true for none, then the relative term would supposit for nothing, whence both members of the previous conjunctive proposition would be false if no man were running, even if all men were white.

4.4.4 Another common rule concerning relative terms of identity

Another common rule is that a relative term of identity supposits or is taken in a proposition as is its antecedent, namely, materially if materially, personally if personally, distributively if distributively, determinately if determinately, and merely confusedly if merely confusedly, but excepting whatever should be excepted on the basis of the previous rule.

It is obvious that this exception has to be made. For it is possible that a relative term supposits or is taken for nothing in a proposition, although the antecedent supposits for many things; this occurs because the antecedent's proposition is true for nothing, as when I say 'A man is a stone and he runs'.

But the question is raised whether in "'Mirror' is a noun and it has two syllables" the relative term 'it' supposits materially, as 'mirror' does. And it seems that it does not, for it does not supposit for itself nor for something similar to it in form.

I say that it supposits materially, but relatively so. So if it supposited for itself or an utterance similar to itself, then it would supposit materially, but not relatively. But when it supposits for its antecedent or for an utterance similar to it, then it supposits materially relatively, for if it supposited personally, then it would have to supposit for the ultimate significata of its antecedent.

The question may be raised whether, given that only Socrates runs and he is white and we say: 'A man runs and he is white', the relative term 'he' then supposits [here] determinately and commonly, or discretely and singularly. And it seems that [it supposits] discretely, because [it does so] only for one [thing], namely, Socrates. But the opposite seems to be true, for then it would not supposit as does its antecedent ['man'].

I say that it supposits determinately and not discretely, for it is not posited in this proposition as a discrete term but as a common term, capable of suppositing for many, for it would supposit for many men if many men were running.

Again, suppose that only two men are running, namely, Socrates and Plato, and that Socrates is white and Plato is black; then the doubt is raised as to how 'he' supposits in the proposition 'A man runs and every he is white' [*homo currit et omnis ille est albus*][82] and whether the proposition is true.

I assert that it looks to me as though the addition of a universal sign, or even of a particular sign, to the relative term taken relatively is inappropriate or

82. To be sure, this proposition as it stands is ungrammatical, but this will be precisely Buridan's point.

superfluous here. For its nature is that it should be taken in the same way as its antecedent; therefore, the sign cannot change its supposition, just as a preceding negation cannot do so (as when I say 'An animal runs and no man is that', the relative term 'that' is not distributed but stands determinately, just as does its antecedent). So it is evidently ungrammatical or unfitting to say 'A man runs and every he is white' or 'A man runs and some he is white' (although such signs may correctly be added to relative terms of diversity or relative terms of accidents, for they do not supposit for the same things as do their antecedents, as will be noted later). But if someone wished to maintain that such a locution is grammatical and appropriate, then he would have to say that 'he' is distributed, and the rule should be understood to concern cases in which the relative term is taken absolutely, without the addition of a sign.

4.4.5 Personal pronouns and relative pronouns

> At this point we have to deal in more detail with the various sorts of relative terms. And concerning the word 'he/that' [*ille*] or 'it/that' [*illud*] it is obvious that it is not always taken relatively, but sometimes demonstratively, as when, pointing at a man, I say: 'That man is running', and in this way it is irrelevant to the present consideration. But sometimes it is taken as the antecedent of the relative term 'who' [*qui*] or 'what' [*quod*], as when I say 'That man is running who earlier was disputing'; here 'that' is taken only for a particular sign and 'who' is taken in place of the relative term 'that', marking a conjunction. Hence, the proposition is resolved into the conjunction 'A man is running and that [man] earlier was disputing'.

Note that the terms 'who' [*qui*] and 'he/that' [*ille*], or 'what' [*quod*] and 'it/that' [*illud*], are typically used in the same proposition, so as to provide the subject for two verbs, one for one and the other for the other. And this happens usually in two ways: in one way so that both of these terms precede both the first and the second verb, as in saying 'He who [*ille qui*] sleeps dreams'; but sometimes one of these terms precedes the first verb and the other precedes the second verb and follows the first, as in 'he sleeps who dreams'. And there is a difference between these two. For in the first way the proposition is categorical, the subject of which is the aggregate of these two terms and the first verb; as when I say, 'He who sleeps dreams', the whole [phrase] 'He who sleeps' is the subject, composed of a determination and determinable, since

the word 'he' (or at least the implied substantive, which would be expressed if we said 'That man [*ille homo*] who sleeps dreams') is posited as a determinable, and the remainder, 'who sleeps', is put there as a determination; finally, the verb 'dreams' is put there for both copula and predicate. In such a proposition the term 'he' is not posited relatively but rather antecedently, and it has no more import than the name 'someone'. But in the second way the proposition is hypothetical and is equivalent to a conjunctive proposition, as was said earlier. And sometimes the term 'he/that' [*ille*] comes first and the term 'who' [*qui*] follows, as in 'He sleeps who dreams'; and sometimes conversely, as in 'who sleeps, he dreams'; or even distributively, as in 'Whoever sleeps, he dreams'. And these are equivalent propositions, whether 'who' or 'he' comes first, for whichever of these terms comes first, that is not taken relatively. We should also note that the terms 'he' [*ille*] and 'he himself' [*ipse*], when they are taken relatively, are equivalent (and the term 'he' is rarely used nonrelatively). Also, in this way, we often use the relative term 'the same' [*idem*] synonymously with the relative term 'he' [*ille*], so that it is equivalent to say 'An animal runs and it [*illud*—the neuter form of *ille*] is a man' and to say 'An animal runs and the same [animal] is a man'.

4.4.6 Reflexive pronouns

> Of the relative term 'him/her/itself' [*se*] we have to assert that it has the property of always being posited in the same categorical proposition as its antecedent, as in 'Socrates likes himself'. Its other property is that, if it is taken distributively, it is impossible to descend to one determinate suppositum thereof, the others remaining the same; rather, it is necessary to descend one by one; for the inference 'Every man likes himself; therefore, every man likes Socrates' is invalid, but you can infer, therefore, 'Socrates likes Socrates and Plato likes Plato', and so on for the rest.

Against the first alleged property one can argue that if I say 'Socrates runs and he likes himself', here the antecedent is 'Socrates', and it is not put in the same categorical proposition as is the relative term 'himself'.

I reply that 'himself' does not refer to 'Socrates' immediately but by the mediation of the relative term 'he', which is immediately antecedent to 'himself' and is put in the same categorical with it.

Concerning the second alleged property it appears that it does not solely pertain to the relative term 'him/her/itself' [*se*]; rather, it applies to others as

well, namely, to the relative term 'his/her/its own' [*suus*], or even to 'his/her/its' [*ipsius*], when it is taken in place of the relative term 'his/her/its own'. For example, if I say, 'Every man sees his own [*suum*] horse' or 'Every man sees his [*ipsius*] horse', this does not imply 'every man sees Socrates' horse', but it does imply 'therefore, Socrates sees Socrates' horse and Plato sees Plato's horse', and so on for the rest.

4.4.7 Possessive pronouns

We also have to deal with the relative term 'his/her/its own' [*suus*]. The rule in this case is that it does not cross-refer to its antecedent according to its resolution in the nominative case, but rather in the genitive case; thus when I say, 'Socrates drinks and his own horse [*equus suus*] eats', this does not imply 'Socrates eats', but it does imply 'Socrates' horse eats'. Hence the relative term 'his/her/its own' is equivalent to 'his/her/its' [*ipsius*], or 'of that" [*illius*]. For example, saying 'Socrates rides his own [*suus*] horse' is equivalent to saying 'Socrates rides his [*ipsius*] horse'.

Here we can note that 'his/her/its own' is taken in many ways. For primarily it indicates possession, as in 'Socrates and his own donkey', and then it refers back to its antecedent as to the possessor; and sometimes it indicates an effect, as in 'Aristotle and his own books', and then it refers back to its antecedent as to the efficient cause; and sometimes it is added to a substantive term from the category of relation, and then it refers back to its antecedent as to something having the converse relationship, as when I say 'Socrates and his own son', it is indicated that Socrates is the father, and if I say 'Socrates and his own slave', it is indicated that Socrates is the master, and so on for the rest.

4.4.8 Relative pronouns of accidents

Concerning the relative terms 'such' [*tale*] and 'that much/of the same amount' [*tantum*], it is obvious that they require antecedents from the categories of quality and quantity [respectively], as in 'Socrates is of some quality, or of some quantity [*aliqualis, vel aliquantus*], and such, or of

the same amount [*talis, vel tantus*], is Plato'; or even more specifically, in 'Socrates is white, or six feet tall [*albus, vel tricubitus*], and such, or of the same height [*talis, vel tantus*], is Plato'. And it is clear that they do not supposit for the same things as those for which their antecedents supposit, but it is sufficient if they supposit for similar or equal things.

We should take note of the relations between 'such' and 'as', or 'so much' and 'as much', just as we did in the fifth part of this chapter concerning the terms 'who' and 'he'. For both of these are sometimes placed antecedently to the other terms and other terms are taken relatively to them, as in saying 'Such is Socrates as is Plato', or in saying 'As is Socrates, such is Plato', and both of these propositions are equivalent to the conjunction 'Socrates is of some quality [*qualis*], and Plato is such'. Sometimes 'such' and 'as' are put in the same categorical proposition, as in saying '[A thing] such as Plato is runs'; so here the whole [phrase] '[A thing] such as Plato is' is the subject. And the same things should be said about 'that much' and 'as much' [*tantus* and *quantus*], and about 'when' and 'then' [*quando* and *tunc*], or even about 'where' and 'there' [*ubi* and *ibi*], 'in that way' and 'in the way' [*taliter* and *qualiter*], and the like.[83]

4.4.9 Relative terms of diversity

(1) Relative terms of diversity are usually taken to be 'other' [*aliud*], 'another' [*alterum*], 'different', [*differens*], 'diverse' [*diversum*], and the like. But it appears to me that these are not relative terms in the way we have been discussing relative terms here; rather, they are relative terms in that they are terms in the category of relation, just as are 'similar', 'dissimilar', 'equal' and 'unequal'. And the same goes for the term 'same' [*idem*], unless it is taken in the place of the relative term 'that'; for everything that is the same is the same as something, and everything that is diverse or other than is diverse from or other than something else. Nevertheless, since names of this sort have certain special difficulties besides those applicable to other names in the category of relation, we want to say some-

83. Examples include the following: 'As much is Socrates, that much is Plato' *(Quantus est Socrates, tantus est Plato);* 'When Socrates arrives, then Plato greets him' *(Quando Socrates pervenit, tunc Plato salutat eum);* 'Where Socrates lives, there he sleeps' *(Ubi Socrates vivit, ibi dormit);* 'In the way Socrates looks, in that way Plato wants to look' *(Qualiter Socrates apparet, taliter Plato vult apparere).*

thing about them. (2) And first I say that the foundation of the relative term 'same' and the terminus[84] in relation to which it is predicated have both to supposit or be taken for the same thing, as when I say 'Socrates is the same as a man', then the terms 'Socrates' and 'man' supposit for the same thing; but the foundation of the relative term 'other', or 'diverse', or 'different', or 'another' [*alterum*] and the terminus in relation to which it is predicated should not stand for and be verified of the same thing but should relate to different things. (3) Second, I say that the proposition in which such a relative term, usually called 'a relative term of diversity', occurs, needs to be expounded by three categorical propositions joined in a conjunction, namely, by two affirmative propositions, in which 'is' is predicated absolutely [*secundo adiacens*] of the foundation and of the terminus of that relative term, and by a third, negative proposition, in which the terminus is denied of the foundation or conversely; thus when I say 'B is other than A', this is expounded as 'B is, and A is, and B is not A'.

In this, the final part of this chapter, there are three sections. The first states the sense in which such terms as 'other' and 'another' should be called relative terms, and is obvious. Thus, if I say 'A man runs and [something] other [*aliud*] is white', it is not necessary that the term 'other' has the term 'man' as its antecedent, or even as its foundation or terminus. On the contrary, the name 'other' is an adjective substantivated in the neuter gender; and so the aforementioned proposition is equivalent to 'A man runs and another thing [*res alia*] is white', and in this way the name 'thing' is the foundation of the term 'another' [*alia*]. But it is not necessary that 'another' here be related to a man, unless we add 'other than him', or 'other than a man', just as we could add 'other than a donkey' or 'other than a goat'.

And we should note that the terms 'other' [*aliud*], 'another' [*alterum*], 'different' [*differens*], and 'diverse' [*diversum*] are commonly used by dialecticians and sophists as synonymous. Therefore, also here we treat of them in this way, although sometimes different intentions are attributed to them in a restricted manner, as is clear from Porphyry concerning 'other' and 'another', and from bk. 10 of the *Metaphysics* concerning 'different' and 'diverse'.[85] And we should understand the verb 'differs' in a similar manner, for 'differs' is equivalent to 'is different'.

The second section is a single rule. Concerning this we should know that

84. 'Foundation' and 'terminus' translate here the technical terms *fundamentum* and *terminus.* In this technical sense the foundation of a relation is that which relates something to something else, whereas the terminus is that which is related by the relation to the thing in question.

85. Aristotle, *Metaphysics* X.3.1054b23–31.

since the aforementioned names are adjectives, they need substantives to govern them; indeed, even if the word 'other' [*aliud*] is taken as substantivated [*substantivate*], it has to be resolved into a substantive and an adjective: thus 'other' becomes 'another thing' [*res alia*]. And in the rule I call this substantive the 'foundation', but I call the term in the dative, ablative, or accusative case governed by such a relative word the 'terminus in relation to which it is predicated'. Thus when I say 'A man is the same as an animal' or 'the same with an animal', then 'man' is posited as the foundation and '[as an] animal' or '[with an] animal' as the terminus; and if I say 'A man is other than a stone' [*alius ab lapide, vel aliud ad lapidem*], then 'man' is the foundation and '[than a] stone' is the terminus. When these things have been grasped, then the rule is sufficiently clear.

The third section is a further rule, whence it becomes clear that the aforementioned relative terms of diversity imply some negations within themselves, so that the names following them as their termini are distributed. Therefore, 'is other than [a] man' implies 'other than Socrates', and 'is different from [a] man' implies 'is different from Socrates'. But if the aforementioned termini precede these relative terms, then they are not distributed by them. For example, if I say 'From a [certain] man Socrates is different', then 'man' is not distributed, indeed, 'From Plato Socrates is different' implies 'From a [certain] man Socrates is different', for 'man' stands here determinately.[86]

But the following query is raised: if I say '[Something] other than [*aliud ab*] a man is an animal', then is 'animal' distributed? And I reply that it is not distributed. For the negation implied in 'other' is not a negating negation, but it functions as an infinitizing negation, and so affects neither the copula of the whole proposition nor the predicate. Therefore the proposition is affirmative, although it implies a negative proposition, just as '[A] non-man is white' is affirmative, although implies the negative proposition '[A] white [thing] is not a man'. If you ask: "How is this to be expounded?," I reply that first the substantivated adjective should be resolved: thus '[Something] other than [*aliud*] a man is an animal', i.e., 'A thing other than [*res alia*] a man is an animal' is then expounded as 'A thing is and a man is and a thing that is not a man is an animal', and it is obvious that 'man' stands here determinately. Indeed, if I say 'Another animal than a man runs', then 'animal' is not confused, for such a relative term by its nature confuses only its terminus but not its foundation; therefore, 'Another animal than a man runs' and 'An animal other than a man

86. *Si dico ab homine Socrates differt, vel ab homine Socrates est alius, homine non distribuitur, immo sequitur a Platone Socrates est alius, ergo ab homine Socrates est alius, quia homine ibi stat determinate.*

runs' are equivalent. And this is similar to the situation with privative terms, for if I say '[Something] deprived of sight is a man', then 'sight' is distributed, but 'man' is not, for this is expounded as 'A thing that has no sight is a man', with the word 'no' not taken negatively but infinitizingly.

4.5 Chapter 5: On appellation

4.5.1 The aim of the chapter

> Now we turn to appellation. Some terms are appellative and others are not. For substantial terms in the nominative case or terms not connoting anything at all beyond the things for which they supposit are not appellative terms properly speaking. But every term connoting something other than what it supposits for is called 'appellative' and appellates that which it connotes as pertaining to [*adiacens*] that which it supposits for, as when 'white' [*album*] appellates whiteness as pertaining to that which the term 'white' [*album*] is apt to supposit for. These points were already made in the first chapter of this treatise.

This fifth chapter is about appellation and contains four parts. The first puts forth the aim of the chapter and repeats some points made toward the end of the first chapter of this treatise. The second is about the difference between appellation both on the side of the subject and on the side of the predicate. The third is about the difference between the appellation of a thing signified or consignified and the appellation of the concept [*ratio*] in terms of which something is signified. The fourth is about the appellation of certain terms in particular.

4.5.2 The difference between appellation on the side of the subject and the side of the predicate

> (1) An appellative term always appellates its form, whether it is placed on the side of the subject, i.e., before the verb, or on the side of the predicate, i.e., after the verb. (2) But sometimes it appellates [its form] differ-

ently before and after [the verb], for after [the verb] it appellates its form precisely for the tense of the verb, (3) but before the verb, if the verb is in the present tense and the predicate is not ampliative, then it appellates its form precisely for the present time;[87] (4) however, if the verb is in another tense or if the predicate is ampliative, then the term occurring before the verb appellates its form indifferently, i.e., disjunctively, as it were, for the present time for the tense of the verb, or for the time for which the predicate ampliates, if it is ampliative.

The second part contains four rules in four sections. And for [a proper understanding of] all of these rules we need to know what we should understand by the 'form' of an appellative term in the foregoing. So I say that, conventionally, by the 'matter' of a term we usually understand that for which the term is apt to supposit. Thus this is how Aristotle speaks about matter in the fifth book of the *Metaphysics,*[88] where he says: 'those are said to be numerically one, the matter of which is one', that is to say, the predicate 'numerically one' is verified of [terms] whose matter is one, i.e., which supposit for the same thing; for it is in this way that we truly say that a man and an animal are numerically one.[89] But by the 'form' of a term we usually understand whatever the term appellates, whether it is an accident or a substance and whether it is matter or form, a composite of matter and form, or an aggregate of many things.[90] For example, the term 'wealthy' supposits for a man, and so the man is called its 'matter', and it appellates houses, lands, and money, and other things he possesses as pertaining to him as to their possessor, and so such things, insofar as [*ea ratione qua*] they are possessed, are called the 'form' of the term 'wealthy'. So this is the ground of my assertion that an appellative term placed in a proposition always appellates its form, i.e., the things it connotes or of which it is appellative, and it appellates them as pertaining, either in the present or in the past or in the future or possibly, to the thing for which this term supposits, or to the thing for which the substantive term in the nominative case with which it is construed would supposit if it were the subject or the predicate of a proposition. For example, if I say 'A just devil runs' the subject supposits for nothing, but the term 'just' appellates justice as pertaining to a devil, for which the term 'devil' would supposit if it were the subject or the predicate of a proposition; and so the proposition is false, for the sub-

87. That is, not indifferently to any time.

88. Aristotle, *Metaphysics* V.6.1016b31–32.

89. This is one the most glaring examples of Buridan's twisting the meaning of Aristotle's text to make it lend support to his conception.

90. For the later "career" of this terminology see Peter of Ailly, *Concepts and Insolubles: An Annotated Translation,* trans. P. V. Spade (Dordrecht: Reidel, 1980), p. 109, Spade's n. 188.

ject supposits for nothing, due to the lack of the pertinence [*adiacentia*] of the appellated thing.

The second rule is clarified by the following: suppose Socrates is white at the present time and he will never be white in the future; then the proposition stating that he will be white is false, for 'white' in this proposition does not appellate whiteness for the present time, but only for the future, and we supposed that whiteness will never pertain to Socrates in the future, although it pertains to him at present. It would be otherwise if we were to say: '[A] white [thing] will be Socrates', for the proposition would be true if whiteness pertained now to the thing that will be Socrates, although it would never in the future pertain to it. The proposition would also be true if whiteness now did not pertain to him but would do so in the future.

Hence the fourth rule is also clear, namely, that a term put before the verb appellates its form in a disjunctive manner, for the present and for the tense of the verb, and this holds also if the predicate is in the past or in the future tense, even if the verb is in the present tense. For example, if I say: 'A white man is going-to-dispute [*disputaturus*]', this is true, whether whiteness now pertains to that man who is going to dispute and will never afterwards pertain to him, or whether it does not now pertain to him and it will pertain later.

But to the second rule it is objected that if we say: 'Socrates is going-to-dispute', the term 'going-to-dispute' appellates the act of disputing for the future and not for the present time, although the verb is in the present tense. I reply that the term 'going-to-dispute', on account of its mode of signification [*modus significandi*], appellates the future time together with that act of disputation, and this sort of appellation cannot be taken away from it by its connection with a verb in another tense. Nevertheless, it appellates that future time in such a manner that [that future time] has to be future with respect to the time connoted by the verb. And [that future time] need not be future with respect to the time in which we form the proposition and which we use in our locution as the present time, unless the verb [of the proposition] is in the present tense. But if the verb is in the present tense, then the appellated future has to be future with respect to that present time. For example, if I say: 'Socrates is going to dispute', then the word 'going to dispute' appellates a time that at this present time is future; but if I say 'Aristotle was going to be generated', then the term 'going to be generated' appellates a time that is not future but was future at the time connoted by the verb 'was', and was a time that preceded the generation of Aristotle. And so it is clear that the terms 'going to be generated' and 'going to dispute' appellate their forms, namely, a future time, in the above propositions with respect to the time of the verb, so that relative to the tense of the verb that time is or was future, and not so that this time ought to be present in the time of the verb. And so if I say: 'The Anti-

christ will be generated', then the term 'generated' appellates a past time, not a time that is past now but one that in the future will be past, namely, in the time designated by the verb 'will be' [*erit*].

Further, we should also note that the second rule, as well as the third, should be understood to be dealing with nonampliative verbs and copulas. For if the verb or the copula is ampliative, as is the verb 'can' or the copula in the proposition 'A black thing is possibly white', then we should not say that 'white' appellates its form precisely for the present time; indeed, it appellates it indifferently to cover the time to which [the subject] is ampliated.

*4.5.3 The appellation of concept [*appellatio rationis*] in intentional contexts*

> There is a great difference, with respect to appellation, between verbs that signify acts of the cognitive soul, such as 'recognize', 'understand', 'signify', 'supposit', and the like, and other verbs, such as 'cut', 'burn', 'move', and the like. For with respect to verbs that do not signify such acts of the soul terms appellate only things that they signify or connote ultimately, but they do not appellate the concepts by means of which they signify. In relation to verbs that do signify such acts of the soul, however, if they follow these verbs and are construed with them as terminating their action, terms do appellate their own concepts by which they signify whatever they signify; but if these terms precede these verbs, then they do not appellate their concepts in this manner.

It should be noted that we discussed this matter more amply in our *Sophismata,* in the fourth chapter, "On Appellation"; we also said many things about this issue in the last part of the third chapter of the present treatise; so those things will be taken for granted here. Therefore, now I briefly state that it makes a great deal of difference to say 'I know the one approaching' and to say 'The one approaching I know'. For however much you know your father by many concepts, such as those according to which he is said to be 'man', 'animal', 'father', and 'big', if you do not know him by the concept from which the name 'one approaching' is taken, then, provided he is in fact the one approaching, the proposition 'You know the one approaching' is false, for, because of the appellation of the concept, the sense of this proposition is that you know him by the concept according to which he is said to be the one approaching; but the proposition 'The one approaching you know' is true, for

it is not required for its truth that you know him by that concept according to which he is said to be the one approaching, but it is sufficient if you know him by another concept, whatever that may be. And from this we conclude that we cannot infer one name from another after such a verb, even if they supposit for the same, unless those names are synonymous, or unless the concept of the name in the consequent is included in the concept of the name in the antecedent in such a manner that it is impossible to have the concept of the name in the antecedent in the soul without having the concept of the name in the consequent. Consequently, 'I know every triangle' does not imply 'I know every isosceles', but it does imply 'I know a triangle', for the concept corresponding to the expression 'every triangle' cannot be in the soul without the concept corresponding to the name 'triangle'. But when situated before the verb one name can be inferred from another, provided they supposit for the same, as in [the inference] 'Your father you know, and he is the one approaching; therefore, the one approaching you know'. On the other hand, in propositions with other verbs, one can be inferred from the other whether before or after the verb, provided they supposit for the same. For [the inference] 'A stone hits the one approaching, and that one approaching is white', or 'your father', 'therefore, a stone hits a white [man]' or 'your father' is valid.

A serious doubt is raised against these claims, however, that if these claims were true, then it would be impossible for you to see a man or a horse, which appears to be absurd. The consequence is clear, for the concept [*ratio, seu conceptus*] according to which the term 'man' or 'horse' is imposed is a common and universal concept; and so, that you see a man would signify that you see him according to a universal concept, which is impossible, for the senses sense only singularly.

On account of this doubt some people deny the aforementioned appellation of concepts, which, however, is not to be denied, if Aristotle and others who speak after the common fashion say things that are true. For we would say that the First Principle Averroes did not believe to be triune, but he did believe the First Principle to be God. But, with the name before the verb, we have to concede 'The triune Averroes believed to be God', which is clear by an expository syllogism: for the First Principle he believed to be God and that First Principle is triune; therefore the triune he believed to be God. And it is obvious that such an argument is invalid [when the term is placed] after the verb, thus: 'The First Principle he believed to be God and that God is triune; therefore the First Principle he believed to be triune'. It is obvious that this does not follow, for the premises are true and the conclusion is false, and nobody can explain why this turns out to be valid with the term before the verb but not when it follows it, except on grounds of calling attention to the appellation of the concept after, but not before, the verb. And it seems to me that

Aristotle speaks in a similar fashion in bk. 2 of *Sophistical Refutations,* for he denies the consequence 'You know Coriscus, and Coriscus is the one approaching; therefore, you know the one approaching', but [with the term] before the verb one cannot deny the consequence 'Coriscus you know, and Coriscus is the one approaching; therefore, the one approaching you know', for this is a valid expository syllogism. And nobody can explain why this is so, except because of the appellation of the concept before rather than after the verb.

So we have to reply to the doubt. We can say that 'I see [a] man' is not a proper and true locution, but such a proposition, insofar as it would be true, would be accepted in place of the proposition 'I see this man' or 'A man I see'. But we usually use such an improper proposition because from the singular visual cognition there immediately arises the universal intellectual cognition, and so when we see this man, we immediately think of [a] man, whence we believe that we judge something to be a man and an animal by sight, which is not true.

Again, we should note that, besides what has been said, some people say that a predicate appellates its form in such a way that no proposition concerning the past or future time is true unless the proposition had or will have a corresponding proposition of the present [time], which is formed with the entire predicate remaining the same, or with a predicate that is entirely similar with respect to all its dispositions, but this need not hold of the subject. In the same way, they say that a proposition about possibility [*de possibili*] is not true unless it has a corresponding true proposition about actuality [*de inesse*], with totally the same predicate. So they say that 'I will lecture tomorrow' or 'I lectured yesterday' is false and impossible, because 'I lecture tomorrow' or 'I lecture yesterday' is impossible. I discussed this topic in the *Sophismata,* chapter 4, which was about appellations, and what I said there should be read here, for it fits in here as a supplement to this chapter.

It is true, nevertheless, that I should correct what I have said concerning the sixth sophism,[91] namely that I saw Peter and Robert, or even that I shall see, or I can see, every star. For perhaps these propositions are not to be conceded because of the appellation of a concept, since 'to see' signifies an act of the cognitive soul. Therefore, in the place of those propositions I now suggest others, which will serve just as well for the same purpose as that for which those were proposed; thus, in the place of 'I saw Peter and Robert' I suggest 'In this house were Peter and Robert', which I take to be true if one was in it at one time and the other at another time, although they never were there together. Similarly, in place of the proposition 'I will see every star' or 'I can see every star' I posit 'The sun will be', or 'can be', 'in any sign of the twelve

91. *Sophismata,* chap. 4, pt. 1, Sixth sophism.

signs of the Zodiac', and this I think should be conceded. I do not think that what was said previously was incorrect, for one need not seek the verification of examples, as is said in bk. 1 of the *Prior Analytics*.[92] Nevertheless, I have now said that the points made then are to be corrected, in case we do want to seek the verification of the examples, as perhaps one should do in pursuance of the art of sophistry.[93]

4.5.4 The appellation of some specific terms

(1) Next, something should be said about [the appellation of] some names in particular. First I assert that a substantive oblique term[94] appellates what its nominative form would supposit for as pertaining to [*adiacens*] what the nominative term governing it supposits for. (2) The terms 'my' and 'your' appellate me and you as pertaining to the things for which their substantives supposit, and thus also 'our' and 'your' [in the plural] appellate us and you [in the plural]; (3) next, the term 'its own' appellates what its antecedent supposits for as pertaining to what the substantive of 'its own' supposits for. (4) Also, the modes of pertaining [*adiacentia*] vary in accordance with what was said in the seventh part of the previous chapter concerning 'its own'.

This final part of the present chapter has four sections; the first three deal with various terms in particular, and the fourth provides a general rule. The first is about oblique terms. Since these terms are not subjects or predicates of propositions, they cannot supposit, properly speaking, and so they appellate the things that they signify, both those that their nominative forms would appellate, if those nominatives are appellative, and those that the nominatives would supposit for. I give some examples relevant to both the first and the fourth section, insofar as the latter is to be applied to the terms of the first. For if I say 'Socrates' donkey', then the term 'Socrates" appellates Socrates as pertaining to the donkey as a possessor, and if I say 'This is Aristotle's book', then the term 'Aristotle's' appellates Aristotle as pertaining to the book as a maker, namely, as one who made it, or as one who made the first exemplar after which other similar ones were made later. And if I say 'Socrates is Plato's

92. See Aristotle, *Prior Analytics* I.41.49 b34–37.

93. Here I translated what appears to be the most fitting "hybrid" of the Hubien text and the critical text.

94. Concerning the phrase 'oblique term' see n. 6 above.

father', the term 'Plato's' appellates Plato as pertaining to his father Socrates as a son; and in a similar fashion, if I say 'Socrates sees Plato', then the term 'Plato' [*Platonem,* in the accusative case] appellates Plato as pertaining to Socrates who sees, as being one who is seen, and so on for the rest.

The same goes for the second section. If I say 'my donkey', then 'my' appellates me as pertaining to a donkey as a possessor, and if I say 'my father', then the term 'my' appellates me as a son; and similarly for 'your', 'our' and 'your' [in the plural].

And the same sort of examples could be given for the third section, as can be seen in the passage to which the fourth section refers.

4.6 Chapter 6: On ampliation and restriction

4.6.1 The definition of status

(1) Finally, we have to say something about the ampliation and restriction of supposition. First we have to consider the *status*[95] in accordance with which a term is neither said to be ampliated nor restricted, and relative to which it is sometimes said that ampliation occurs, and sometimes said that there is a restriction. (2) That status can be assigned when the term supposits for or appellates all its significata of the present time; as when I say 'A man runs' or 'Every man runs', 'man' supposits indifferently for all men who exist at the present time, but not for others.

This final chapter is titled "On Ampliation and Restriction." It contains six parts: the first assigns the status relative to which ampliation and restriction

95. *Status,* clearly intended to be a technical term, refers to the state in which a term is, i.e., the range of reference that a term has when it is neither ampliated nor restricted. Buridan assigns this status as the range of reference a term has when it supposits for (or appellates) all its significata (or connotata) in a present-tense proposition. Hence, in other tenses, and in modal and intentional contexts as well as in natural supposition, the term's range of reference will be extended, ampliated, beyond its status, whereas in adjectival or other restrictive constructions (as with restrictive relative clauses) it will be restricted to a scope within its status.

are said to occur. The second deals with ampliation beyond the status; the third with restriction within the status; the fourth with the alienation of the status; the fifth with the alienation of supposition or appellation; and the sixth with the total removal of supposition.

The first part has two sections, the first of which sets out the aim of the chapter, and from where we should begin, and is obvious. The second assigns the status, and this is also clear enough. And if others assign a different status, that is not a problem, provided that speech takes place accordingly.

4.6.2 Ampliation beyond the status

(1) We should realize that a term is ampliated beyond the status in various ways. First, if in its categorical proposition it is placed before a verb of the past time, then it is ampliated to stand for past things, whether in suppositing or in appellating, along with the present things. For example, if I say 'A man ran', the term 'man' supposits indifferently for all men who are and who were. (2) Second, in an analogous manner, a term put before a verb of the future time is ampliated to stand for future things. (3) Third, a term put before the verb 'can' or before the copula of a proposition about possibility [*de possibili*] in the divided sense is ampliated to stand for possible things, even if they do not and did not exist. Therefore the proposition 'A golden mountain can be as large as Mont Ventoux' is true. (4) Fourth, the same has to be said about a term put in a proposition about necessity [*de necessario*] in the divided sense, for such a proposition is equivalent to one about possibility. (5) Fifth, a term is ampliated to past, future, and possible things if it is construed with a verb signifying an act of the cognitive soul, whether the term is before or after the verb; and so the proposition 'A man I think of' is true if I think of Aristotle or the Antichrist, and also 'I think of a rose' is true even if no rose exists. (6) Sixth, verbal nouns or participles deriving from such verbs, if they are the predicates of propositions, ampliate the subjects just as the aforementioned verbs; therefore, something is generable or corruptible, or generated or corrupted, or opinable or opined, which does not exist.

The second part contains six rules of ampliation, and all of them are clear enough. From these rules it follows that such propositions are expounded by propositions with disjunctive subjects. For example, 'A will run' is equivalent

to 'What is or will be A will run'. Similarly, 'A is dead' equals 'What is or was A is dead'. Similarly, 'A can run' equals 'What is or can be A can run'. Similarly, 'The one creating is of necessity God' equals 'What is or can be the one creating is of necessity God'. Similarly, 'A is thought of' equals 'What is or was or can be A is thought of'.

Likewise, therefore, such propositions may need to be converted into propositions with a disjunctive predicate: for example, 'A man is dead; therefore, a dead [thing] is or was a man', 'Socrates is going to dispute; therefore, something going to dispute is or will be Socrates', 'Socrates can be white; therefore, a white thing is or can be Socrates' (indeed, it would be enough to say: 'therefore, a white thing can be Socrates', for everything that is can be), 'The one creating is necessarily God; therefore, what is necessarily God is or can be the one creating', or thus, 'therefore, God can be the one creating'. (Analogously, even as a universal affirmative is not converted into a universal, but into a particular, so a proposition about necessity is not converted into another one about necessity but into one about possibility, for the necessary is to the possible as the universal is to the particular.) Likewise, 'A golden mountain is thought of; therefore, what is thought of is or was or can be a golden mountain'. In a similar manner we say that the aforementioned names or participles, when taken adjectivally, ampliate the substantives to which they are added, and also [ampliate] the subjects of which a complex [term consisting] of a substantive and such an adjective are predicated, in the way described above. Therefore, the proposition 'Aristotle is a dead man' is conceded, although Aristotle is not a man; and even the proposition 'A horse is a dead horse' is conceded, but the proposition 'A dead horse is a horse' is denied.

4.6.3 Restriction within the status

(1) A term is restricted within its status in many ways. First, by an added determination that applies to it but not for all its supposita, as in 'A white man runs', 'man' is not taken now for all presently existing men, but only for the white ones; or again, in 'Socrates' donkey runs', 'donkey' is not taken for all donkeys, but only for those that are Socrates'. (2) Second, the adjective is also restricted by its substantive, if it applies to other things to which the substantive does not apply; thus, in 'A white man runs', the term 'white' is not taken for all white things but only for those that are men.

The third part contains two obvious rules. Concerning these we should note that if the supposition of the term is ampliated to future, past, or possible things, these two rules still hold for restricting that ampliation with respect to the supposita. Thus, when I say: 'Every white man will be good', the term 'man' is taken for present as well as for future [men], but not for all, only for those that are or will be white, nor is the term 'white' taken for all white things, but only for those that are or will be men.

4.6.4 The alienation of the status

> Sometimes the aforementioned status of a term is not preserved, nor is it ampliated or restricted, but rather it is alienated, so that the term no longer supposits (or is taken) for the present things for which it would supposit (or be held) in the status; rather, [the term is taken] only for future or past things, unless it happens that those future or past things are also present. This is in fact how the terms following verbs of past or future time supposit or appellate.

The fourth part is quite clear, provided we give some examples. For if I say, 'A horse was white', then the term 'white' supposits only for what was white in the past, so that if we assume that all horses in the present time are white and that never in the past was a horse white, then the term 'white' supposits for no horse, indeed, it would supposit for nothing at all, unless something in the past was white, even if everything is white in the present. It is true, nevertheless, that if this horse, which is [existing in the] present, also existed in the past and was white, then the predicate 'white' supposits for it, but not because it is [existing] or because it is white, but because in the past it was [existing] and was white.

In its own way, the same goes for the future. Similarly, in the above proposition the term 'white' appellates whiteness as pertaining only to something that was; and if it is still pertaining to that which is, this is accidental to the truth of the proposition. So if Socrates yesterday was white, and he still is white, then the proposition 'Socrates was white' is true, but not because whiteness now pertains to him, but only because it did pertain to him. This is not so on the side of the subject, for if I say 'A white [thing] will be Socrates', assuming that Socrates will be white, the proposition is true if whiteness now pertains to Socrates, even if later it will never pertain to him.

4.6.5 The alienation of supposition and appellation

Supposition, or even appellation, sometimes is so alienated that the term is no longer held for its own significata but for others. This comes about by an infinitizing negation, as when I say 'A man is a non-donkey', the term 'donkey' is prevented from standing for donkeys and is forced by the negation to stand for everything else indifferently. In the same way, if I say 'A non-white man runs', the term 'white' does not appellate whiteness as pertaining to a man, but as non-pertaining to him.

The fifth part is also sufficiently explained. For this is the function of an infinitizing negation, namely, to bring it about that a term be held for things for which without the negation it would not be held, and [that it] not be held for those for which without the negation it would be held.

4.6.6 The total removal of supposition

Sometimes even the whole supposition of a term is removed, and this comes about in two ways. In one way this is by a positive indistant combination[96] [*complexio*] of a term with another term, either in the subject or in the predicate, so that one of these terms does not apply to the other, as when we say 'A man able to neigh [*homo hinnibilis*] runs'; here the subject supposits for nothing. In the other way [this comes about] by a privative combination [*complexio*] of terms of which one belongs of necessity to the other, as in saying 'A non-risible man runs', the subject supposits for nothing.

This final part is clear. But we should realize that in the proposition 'A man able to neigh runs', the names 'man' and 'able to neigh' [*hinnibilis*] are taken significatively, for both of them present us with the concept of their ultimate significata. But 'able to neigh' prevents supposition for men, for no man is able to neigh, and 'man' prevents supposition for things able to neigh, for nothing able to neigh is a man.

96. An *indistant combination (complexio indistans)* is a nonpropositional combination of categorematic terms (such as the combination of a substantive and an adjective, as in 'a wise man'), as opposed to a "distant combination" *(complexio distans),* which is a combination of categorematic terms in a proposition (as in 'A man is wise').

Treatise 5
On syllogisms

5.1 Chapter 1: Some general preliminaries

5.1.1 The definition of a categorical proposition and of its terms

> (1) The following treatise is about syllogisms. We should begin [our discussion] with some general remarks. (2) A categorical proposition is an expression that affirms something of something or one that denies something of something. (3) A term is that into which a proposition is resolved, as into a subject and a predicate.

The fifth treatise is about syllogisms, and it will contain ten chapters. The first premises some general remarks, the second distinguishes and enumerates the modes of the three figures, the third is in particular about the first figure, the fourth is about the second, the fifth is about the third, the sixth is about syllogisms with nonmixed modal premises, the seventh is about their mixtures, the eighth is about syllogisms with oblique terms, the ninth concerns syllogisms with infinite terms, and the tenth is about the powers of syllogisms [*potestates syllogismorum*].

The first chapter has eight parts. The first part describes and classifies categorical propositions and also describes terms. The second part describes what *dici de omni* and *dici de nullo* are ['to be predicated of all' and 'to be predicated of none'], the third describes syllogisms, the fourth distinguishes the propositions of which a syllogism is composed, the fifth describes the terms of which the propositions of syllogisms consist, the sixth describes what a syllogistic figure is and distinguishes [the various] figures, the seventh describes what a syllogistic mode is, and the eighth puts forward some general rules.

The first part contains three sections. The first propounds the aim of this treatise and the particular intention of this chapter. The second classifies or describes categorical propositions, for now we intend to deal with syllogisms constituted by categorical propositions. And this classification, as was stated elsewhere, is carried out in terms of the quality of propositions, for some propositions affirm something of something, namely, because the predicate is affirmed of the subject, and others deny something of something, because the predicate is designated as being removed from the subject.

The third section describes the terms of categorical propositions, noting that a categorical proposition has two terms, namely, the subject and the predicate. This is why Aristotle says: "a term is that into which a proposition is

analyzed, as the subject and the predicate."[1] For although a categorical proposition has three principal parts, namely, the subject, the predicate, and the copula, nevertheless, the copula strictly speaking should not be called a term of a proposition, for it is an intermediate [*medium*] between the subject and the predicate; but a term [*terminus*] has to be an extremity of the thing terminated and not something between [the extremities].

And we should note that although the subject and the predicate are often composed of many words, as in 'Socrates' horse runs swiftly', nevertheless we assume here, as does Aristotle, that the whole subject and the whole predicate are the terms of a proposition, for in making the distinction between the three figures and their modes, just like Aristotle, we do not intend to go here into the further analysis of a proposition beyond that into its subject, predicate, and copula.[2]

5.1.2 *On* dici de omni *and* dici de nullo

Dici de omni [to be predicated of all] applies when nothing is taken under the subject of which the predicate is not predicated, as in 'Every man runs'. *Dici de nullo* [to be predicated of none] applies when nothing is taken under the subject of which the predicate is not denied, as in 'No man runs'.

1. Aristotle, *Prior Analytics* I.1.24b16–17.

2. It is this restriction in particular that causes the inherent limitation of Aristotelian syllogistic, positioning it, as it were, midway between propositional logic and quantification theory with respect to their capacity to represent inferential relations between various types of (assertoric, nonmodal) propositions. Nevertheless, this does not mean that this is the absolute limit of the representative capacity of medieval Aristotelian logic in general. The theory of syllogistic inferences in the strict sense was supplemented by various further semantical considerations, based primarily on the theory of supposition. These considerations provided an analysis of the intrinsic structure of terms that was left untouched by "pure" syllogistic. As we shall see, by virtue of these further considerations Buridan's Aristotelian logic is able to handle inferences that are inaccessible to "pure" syllogistic. For example, consider 'Of every man some horse is running; every horse is an animal; therefore, of every man some animal is running'. Clearly, in this inference we cannot mark out a common middle term and two extremities in the two premises, so that they would yield the conclusion by dropping the middle term and joining the extremities. The validity of this inference is based on the intrinsic structure of the terms of the premises, which is left unanalyzed by "pure" syllogistic but which is analyzed in the theory of inferences with oblique terms.

The second part is obvious, given that in a universal affirmative proposition the predicate is understood to be predicated of the subject *de omni* [with respect to all], in the sense that for its truth it is required that the predicate be true about the subject with respect to each of its supposita; thus it is necessary that of whatever term the subject is truly affirmed, of that also the predicate is truly affirmed. And it is by virtue of this [principle of] *dici de omni* that the directly concluding[3] affirmative syllogisms of the first figure are evident without any further proof. For in the major proposition the predicate is predicated *de omni* about the subject and in the minor that subject is predicated about another term; therefore, it is necessary that about this latter term the first predicate be truly predicated, provided that the major and the minor were true.[4]

In the same way, in a negative proposition that predicate is understood to be predicated of the subject *de nullo* [with respect to none], i.e., it is understood to be denied of the subject with respect to all of its supposita; therefore, it is necessary that that predicate be truly denied of every term of which that subject is truly affirmed.[5] And it is by virtue of this [principle of] *dici de nullo* that the directly concluding negative syllogisms of the first figure are evident.

But then it is asked whether there is *dici de omni* in the proposition 'Every animal is a stone'. And I say that there is no *dici de omni* here truly, but falsely. There is *dici de omni* here significatively, however, in the sense that the proposition signifies that it would be necessary that if such a proposition were true, then the predicate could be truly predicated of any suppositum of the subject; and this suffices for a syllogistic consequence, since for such a consequence to be valid it is not required that the antecedent be true, but it suffices that it is necessary in every such form that if the antecedent is true then the consequent is true.

3. A syllogism is said to be 'directly concluding' when the major extremity is predicated of the minor extremity in the conclusion; in the converse case it is said to be 'indirectly concluding'.

4. That is, the scheme 'Every A is B and some (every) C is A; therefore, some (every) C is B' is valid by virtue of *dici de omni.* (This scheme comprises *Barbara* and *Darii.*)

5. That is, the scheme 'No A is B and every (some) C is A; therefore, no C is B (some C is not B)' is valid by virtue of *dici de nullo.* (This scheme comprises *Celarent* and *Ferio.*)

5.1.3 The definition of syllogism

> A syllogism is an expression in which, after some things have been posited, it is necessary for something else to occur on account of what has been posited [*quibusdam positis necesse est aliud accidere per ea quae posita sunt*], as in 'Every animal is a substance; every man is an animal; therefore, every man is a substance'; this whole [phrase] is an expression in which after certain things, namely, the two premises, have been posited, it is necessary for something else, namely, the conclusion, to occur, i.e., to follow.

To this definition of syllogism many objections are often raised. First of all, a syllogism seems to be several expressions, whence it is not just an expression, even as many men are not a man. But if it is an expression, then it is asked whether it is declarative, as well as whether it is categorical or hypothetical, and if it is a hypothetical, to which species of hypotheticals it belongs.

Again, the phrase 'it is necessary for something else to occur [*accidere*]' implies contradiction, for accidents are not necessary, as is said in bk. 1 of the *Posterior Analytics*.[6]

Again, this definition applies to things other than syllogisms, for it applies to induction and to consequences from the exponents to what is expounded.[7]

I reply that although a syllogism is composed of several expressions, it is nevertheless a single hypothetical proposition, connecting the conclusion with the premises through the conjunction 'therefore'. Further, it can be relegated [*reducere*] to the species of conditional propositions, for just as a conditional is one consequence, so too is a syllogism, whence a syllogism could be formulated as a conditional, in the following manner: 'If every animal is a substance, and every man is an animal, then every man is a substance'. Strictly speaking, however, a syllogism has an additional feature in comparison to a conditional in that a syllogism posits the premises assertively, whereas a conditional does not assert them. Therefore it would not be inappropriate to place syllogisms in a species of hypotheticals different from those that the author

6. Aristotle, *Posterior Analytics* I.6.75a18–22.

7. Another, perhaps smoother, translation might be 'from analysis to analysandum' (Prof. Henry's suggestion). But this solution would blur the otherwise clear connection between what Buridan is saying here and the medieval doctrine of *exponibilia,* i.e., of apparent categorical propositions that were regarded as requiring analysis in terms of several other categoricals, their exponents. (For example, 'Every man except Socrates is running' is to be analyzed in terms of 'Every man who is not Socrates is running' and 'Socrates is a man' and 'Socrates is not running'.) See N. Kretzmann, "Syncategoremata, exponibilia, sophismata," in *The Cambridge History of Later Medieval Philosophy,* ed. N. Kretzmann, J. Pinborg, and A. Kenny (Cambridge: Cambridge University Press, 1982), pp. 211–45.

enumerated earlier; that species could then be described, as far as its nominal definition is concerned [*quantum ad quid nominis*], in terms of the following expression: 'a consequence that asserts the consequent and the antecedent', and we could impose [on it] the name B, which would then signify equivalently with the given description.

To the next objection I reply that 'to occur' has to be expounded as 'to follow'. I then say 'it is necessary to follow' not because it is necessary to infer the conclusion, for I could dismiss it by not inferring it; rather, I say 'it is necessary to follow' in the sense that if the conclusion is inferred, then the consequence is necessary.

To the next I reply that induction is not necessary on account of its form, unless it were reduced to a syllogism, as one should observe in bk. 2 of the *Prior Analytics*.[8] Concerning the consequence from the exponents to what is expounded, I say that that is a formal consequence, but what is inferred is not different from the premises in intention, but only verbally. For to expound in this manner is only to explain the meaning of the name [*quid nominis*]; but a definition that gives precisely the meaning of a name and the name thus defined have to have entirely the same intention corresponding to them in the soul. And the same goes for a proposition that requires some exposition on account of its syncategoremata, for the proposition and its exponents have to have entirely the same intention corresponding to them in the soul.[9] But we have said that "it is necessary for something else to follow," i.e., that the conclusion has to be other than the premises and other than either of them, not only verbally but in intention as well. It was also said: "in which, after some things have been posited," i.e., not only after some terms, but also some propositions, namely, the premises [have been posited]; this is stated here so as to exclude enthymemes, as well as consequences by conversion, or subalternation or equipollence, or their likes.[10]

8. Aristotle, *Prior Analytics* II.23.68a32–38.

9. See 3.3.3 n. 7 concerning *exponibilia.* By the way, Buridan here makes it entirely clear that as far his theory is concerned, synonymous expressions of spoken or written languages are not distinguished in mental language—a point that is still controversial in the secondary literature concerning Ockham's theory. See P. V. Spade, "Synonymy and Equivocation in Ockham's Mental Language," *Journal of the History of Philosophy* 18 (1980): 9–22; C. Panaccio, "Connotative Terms in Ockham's Mental Language," *Cahiers d'épistémologie*9016 (1990): 1–22. For more recent treatments of the issue see D. Chalmers, "Is There Synonymy in Ockham's Mental Language?" in *The Cambridge Companion to Ockham,* ed. P. V. Spade (Cambridge: Cambridge University Press, 1999), pp. 76–99; and C. Panaccio, "Semantics and Mental Language," in ibid., pp. 53–75.

10. This includes the direct implications of the square of opposition.

5.1.4 The propositions of a syllogism

Every syllogism involves three terms and two propositions, namely, the premises, and a third one that is inferred; the first of these is called the 'major', the second the 'minor' and the third the 'conclusion'.

We should note that in the first figure, where the directly concluding modes are concerned, it is not without reason that the first proposition is called 'major' and the second 'minor'. For the first proposition has to be universal, whereas the second may be particular, and the same holds for the second figure. But in the third figure the first proposition is called major only on account of its being the first; for it is clear that in *Disamis* and in *Bocardo* the first proposition is particular; nevertheless, it is called 'major' by convention.

5.1.5 The syllogistic terms

Out of three terms two propositions can be formed only if one of these terms is taken twice, namely, once in either premise. Of the three terms the one that is placed in both premises is called 'the middle [term]', the one placed with the middle term in the major proposition is called 'the major extremity', and the one placed in the minor proposition with the middle term is called 'the minor extremity'.

This part is clear in itself, for it merely explains the meanings of the terms [*quid nominis*]. It should be further realized that the conclusion consists of those two extremities; whence it is because of the connection of the extremities with the middle [term] in the premises that we infer their own interconnection in the conclusion.

5.1.6 On syllogistic figure

A syllogism has to have two [characteristics], namely, figure and mode. Figure is the arrangement of the three terms in the two premises according to their subjection and predication. And there are three figures, insofar as [the terms] are arranged in three ways; for if the middle term is subjected in one premise and is predicated in the other, then we get the first figure, as in: 'Every animal is a substance; every man is an ani-

mal; therefore, every man is a substance'; if, however, the middle term is predicated in both premises, then we get the second figure, as in 'No stone is an animal; every man is an animal; therefore, no man is a stone'; and if the middle term is subjected in both premises, then we get the third figure, as in 'Every man is an animal; every man is a substance; therefore, some substance is an animal'.

We should note that the first of the aforementioned arrangements, namely, when the middle term is subjected in one and is predicated in the other, can be divided into two arrangements. For [the middle term] is either subjected in the major and is predicated in the minor, and thus we have the first figure, or, conversely, the middle term is predicated in the major and is subjected in the minor, and then it seems that there should be a fourth figure. Hence, it is asked why neither our author nor Aristotle posited a fourth figure.

To this I reply that it could be posited, but Aristotle did not care to discuss it, for it would not be different from the first figure, except in the order of the premises, and the same conclusion would be inferred in one as in the other, although that same conclusion, which would be direct in the first figure, would be indirect in the fourth, and conversely. For example, in the first figure the following is valid: 'Every B is A; every C is B; therefore, every C is A'; and so it is, too, in the fourth figure: 'Every C is B; every B is A; therefore, every C is A'. And thus it is obvious that it is not necessary to discuss this fourth figure any further, for there are as many directly concluding modes in the first figure as there are indirectly concluding modes in the fourth, and these do not differ from those in the first, except in the order of the premises; and so, yet again, there are as many indirectly concluding modes in the first figure as there are directly concluding ones in the fourth figure, and these do not differ from those in the first, except in the order of the premises; whence all modes in the fourth figure would immediately be reduced to those of the first, by the mere transposition of the premises.

5.1.7 On syllogistic mode

A mode is an arrangement of premises in the quantity and quality required necessarily to infer the conclusion.

We should note that if this description of a syllogistic mode is correct, then it is clear that *Barbara* and *Baralipton* should not be taken as diverse modes, since they have the same arrangement of premises in quantity and quality, al-

though they have diverse conclusions. And I take it that this was Aristotle's intention, in bk. 2 of the *Prior Analytics,*[11] where, in assigning the powers of syllogisms, he said that the same syllogism, i.e., the same syllogistic mode, can conclude to several conclusions, for example, the first mode of the first figure, consisting of two universal affirmative premises, can conclude to a universal affirmative directly and to a particular affirmative indirectly. And it is for the same reason that Aristotle, in bk. 1 of the *Prior Analytics,*[12] enumerating the modes of the first figure, did not care to enumerate *Baralipton,* nor *Celantes,* nor *Dabitis,* for they are not really diverse from the modes *Barbara, Celarent,* and *Darii,* according to the definition just given, but he did enumerate the modes *Fapesmo* and *Frisesomorum.*

Nevertheless, it is true that the nine modes that this author assigns in the first figure are indeed distinct from one another, if a mode is described as follows: a mode is an arrangement of the two premises and the conclusion in the requisite quantity and quality and in the position of their terms. And I added the last part, namely, 'in the position of their terms', for *Celarent* and *Celantes* do not differ either in their premises or in their conclusions, but they differ only with respect to the converse position of the terms in the conclusions; and the same goes for *Darii* and *Dabitis.*

5.1.8 Some general rules

(1) Whence we give the following rules. From two particular or indefinite premises no syllogism can result, but it is necessary that one of the premises be universal. (2) Again, from two negatives no syllogism can result, but one of the premises has to be affirmative. (3) Again, if one of the premises is particular, then the conclusion has to be particular; but it is not necessary that, conversely, if the conclusion is particular, then one of the premises should be particular. (4) Again, if one of the premises is negative, then the conclusion has to be negative, and conversely. (5) Again, the middle term never should occur in the conclusion.

It is clear that this part contains five rules in five sections, and it is useful to see how these rules are true and what are their causes of truth [*causae veritatis*].[13]

11. Aristotle, *Prior Analytics* II.1.53a4–14.

12. Ibid., I.4–6.

13. See 1.6.5 n. 85.

And first we should note, in connection with the first rule, that some books give this rule in a form stating that from two particular, indefinite or singular premises no syllogism can result, but [for yielding a syllogism] one of the premises has to be universal. But that rule is false, for an expository syllogism can very well result from two singulars; therefore, this rule should be formulated without the addition of 'from singulars'.

Further, when it is said that one of the premises has to be universal, this should be understood to concern only the case in which the premises consist of common terms, for a syllogism may well be valid in which the middle term is singular, although neither of the premises is universal.

But to see the reason why a syllogism with common terms is not valid unless one of the premises is universal, we should look at the principles by virtue of which affirmative and negative syllogisms are valid. I declare, therefore, that every affirmative syllogism holds by virtue of the principle 'whatever things are said to be numerically identical with one and the same thing, are also said to be identical between themselves'. For example, if a white thing is identical with Socrates and a running thing also is identical with Socrates, then it is necessary that a white thing and a running thing should be identical; since, therefore, it amounts to the same thing to say 'Socrates is identical with a white thing' and to say 'Socrates is white', the inference 'Socrates is white and he runs; therefore a running thing is white' is valid.

It is obvious from this principle, therefore, that in every figure an affirmative syllogism will be valid in which the middle term is singular. For example, in the first figure the following is a valid syllogism: 'Socrates is running and a white thing is Socrates; therefore a white thing is running', provided that 'Socrates' is a singular term, so that it supposits for a single thing. Similarly, in the second figure the following is a valid syllogism: 'A white thing is Socrates and a running thing is Socrates; therefore, a running thing is white'; similarly, in the third figure: "Socrates is white and Socrates is running; therefore, a running thing is white'. And such syllogisms, which thus have a singular middle term, are usually called 'expository syllogisms'.

But we should also realize that by the same principle an affirmative syllogism would be valid even with a common middle term in every figure, if in the minor proposition we were to add a relative [pronoun] of identity, and even if neither of the premises were universal, as for example: 'A man is running, and a white thing is that man; therefore, a white thing is running'; similarly, in the second figure: 'A running thing is a man, and a white thing is that man; therefore, a white thing is running'; similarly, in the third figure: 'A man is white, and that man is running; therefore, a running thing is white'. It is clear that all these syllogisms are valid; and they should be called 'expository', as though their middle term were singular, for the relative [pronoun] of identity

ensures that, if the premises are true, the minor is true for the same suppositum of the middle term for which the major was true, and thus the extremities are said to be the same as the middle term with respect to numerically the same thing; whence it has to be concluded that they are themselves the same.

From these points it is first of all obvious how an affirmative expository syllogism is valid in each figure, whether the middle term is singular or common. It is also clear in the second place that that rule is not universally valid which states that in every valid syllogism one of the premises has to be universal (the same applies to the one which says that from two particular or indefinite premises no syllogism can result); for we have to except from this rule the aforementioned expository syllogisms, namely, the ones in which the middle term is singular, or in which it is a common term, but it is taken in the minor with a relative pronoun of identity.

Now we have to examine why this rule holds (apart from the aforementioned exception) in the case of affirmatives, which we have already started to discuss. And I say that this is so because the middle term is not distributed in either of the premises, but rather supposits determinately. Therefore, either of the premises is true if it is true with respect to a single suppositum of the middle term, whereas the minor may be true not of the same suppositum [as the major], but of another. Therefore the aforementioned principle by virtue of which we said that affirmative syllogisms are valid does not apply here at all. For even if the extremities are said to be identical with the middle term[14] in the premises, nevertheless, this does not hold for numerically the same thing, whence it is not necessary that they be said to be identical in the conclusion; thus when I say: 'A man is an animal and a donkey is an animal', it does not follow that a donkey is a man, for a man and a donkey are not the same animal.

But then you will ask: "How can a syllogism be valid by virtue of that principle when the premises are universal, rather than when they are particular?" And I reply that in the first figure, when the major proposition is universal, then the middle term is distributed, so that the major extremity is said to be identical with that middle term not just on account of one of the supposita of

14. Note Buridan's somewhat strange formulation here. As he is about to explain, when he says that *the terms of a proposition are said to be identical with respect to some of their supposita,* all he means is that some of the supposita of these terms are identical and that this is what the proposition asserts. To be sure, he does not want to say that the terms in question *are* identical but merely that they *are said to be* identical, i.e., are asserted to be identical by the proposition in respect of their supposita. For example, in the proposition 'A man is an animal' the terms 'man' and 'animal' are said to be identical with respect to some of their supposita, according to Buridan, because some supposita of 'man' (indeed all of them) are identical with some supposita of 'animal', and that is what the proposition asserts.

that middle term, but on account of any of its supposita; and thus, when in the minor proposition the minor extremity is said to be identical with the same middle term, it is necessary that this hold with respect to the same suppositum or the same supposita of the middle term as that or those with respect to which the major extremity was said to be identical with [the middle term], whence it necessarily follows that the extremities should also be said to be identical between themselves.

But you should understand the foregoing in the correct sense. For I do not say that two terms *are identical* with each other, but that they *are said to be identical* with each other, in the sense that when they are taken significatively, the predicate 'identical' is truly affirmed of them. For example, a man and an animal are identical, and every man is identical with an animal, so that by virtue of the foregoing principle, if every animal is identical with a substance, and every man is identical with an animal, it is necessary to infer that every man is identical with a substance.

Thus, let these remarks be applied to the first rule, as far as affirmative syllogisms are concerned.

At this point we should also remark in connection with negative syllogisms that they all are valid by virtue of that other principle, namely: 'whatever things are so related that one of them is said to be identical and the other is said to be not identical with one and numerically the same thing, they necessarily have to be said not to be identical with each other'. For example, if A is identical with Socrates and B is not identical with Socrates, then it necessarily follows that A and B are not identical. Since, therefore, it amounts to the same to say: 'Socrates is not white' as to say: 'Socrates is not identical with a white thing', it is obvious that the following inference is valid: 'Socrates is not running and Socrates is not white; therefore, a white thing is not identical with a running thing', or '. . . therefore, a white thing is not running'. And thus it is also clear that in every figure a valid syllogism results from an affirmative and a negative [premise] concluding to a negative [conclusion] if the middle term is singular, or even when the middle term is a common term, with a relative [pronoun] of identity being added to it, in the minor proposition as was said in connection with the affirmatives; and such syllogisms are called 'expository'.

But we should be very careful about such expository syllogisms, lest we wrongly infer the conclusion. For, since the extremities are common terms, if either of them is not distributed in the premises, it would be a mistake to have it distributed in the conclusion, for from a nondistributed term the same term distributed does not follow; for the following is not valid: 'A man runs; therefore, every man runs', or again 'A man does not run; therefore, no man runs'. Therefore, in the first figure, although the middle term is singular, the

major affirmative and the minor negative, you cannot infer a direct negative conclusion in accordance with common usage. For example, the following is not valid: 'Socrates is an animal and a donkey is not Socrates; therefore a donkey is not an animal'; the defect here is that you distribute 'donkey' in the conclusion when it was not distributed earlier; on the other hand, without distribution you can infer: '. . . therefore, a donkey and an animal are not identical' or 'a donkey an animal is not',[15] and the syllogism would then be valid by virtue of the aforementioned principle.

If, however, the major were negative and the minor affirmative, you might directly conclude to a negative and in accordance with common usage, as in 'Socrates is not white, and someone running is Socrates; therefore, someone running is not white'. Again, if the major were affirmative, and the minor a universal negative, you could infer a negative in accordance with common usage, but indirectly, as in 'Socrates is running and no white thing is Socrates; therefore, a running thing is not white'. These, then, are the ways one can syllogize using expository syllogisms in the first figure.

But even in the second figure it is possible to syllogize using an expository syllogism with an affirmative and a negative [premise]. But if neither of the premises is universal, then the conclusion cannot be inferred in accordance with common usage, but rather in the following manner: 'therefore, [an] A and [a] B are not the same', or 'therefore, [an] A [a] B is not'. If, however, the major premise is universal, a direct conclusion should be inferred, and this is in accordance with common usage, for the predicate of the conclusion was distributed in the major; again, if the minor is universal, a direct conclusion should be inferred but one that is not in accord with common usage, or one that is indirect and is in accord with common usage, so that nothing will be distributed in the conclusion, except what was distributed in the premises. And whoever wishes may provide examples.

In the third figure, if the major is negative, a direct conclusion is inferred in accordance with common usage, and if the minor is negative, then a conclusion is inferred in accordance with common usage, but one that is indirect, for in this way nothing would be distributed except what was distributed in the premises.

And whatever we said concerning expository syllogisms in these three fig-

15. Of course, both of these phrases are to be understood in such a manner that on account of this unusual word order both terms are taken out of the scope of the negation (because they both come before 'are not identical' or 'is not'), and so they remain undistributed, meaning: 'there is a donkey and there is an animal such that they are not identical [$(\exists x)(\exists y)(Dx \,\&\, Ay \,\&\, x \neq y)$]. It is this type of formulation that Buridan refers to as one that is not 'in accord with common usage' *(secundum communem modum loquendi).*

ures, when the middle term was singular, should likewise be said when the middle term is a common term taken in the minor proposition along with a relative [pronoun] of identity. And these points should suffice where expository syllogisms are concerned.

Now we should return to seeing whether from two particulars, one being affirmative and the other negative, a [valid] syllogism can result, given that the middle term is a common term located in the minor proposition without a relative pronoun of identity. And it is immediately clear that this is not the case in the third figure: for the middle term would not be distributed in either of the premises, since it is subjected in both; therefore, one of the premises could be true of one of the supposita of the middle term, and the other of another, but not both of any one and the same.

In the first figure, if the major [premise] is negative and the minor is affirmative, and both are particular or indefinite, then nothing follows, for the middle term is not distributed in either. But if the major is affirmative and the minor negative, then the middle term in the minor proposition is distributed; whence some conclusion follows, namely, a negative one, although not in accordance with common usage, for then the extremity that is predicated in the conclusion would be distributed (which would be unacceptable, as neither is distributed in the premises); however, a conclusion like the following would validly follow: '[A] C and [an] A are not identical', or even, '[A] C [an] A is not'; from my saying, e.g.: '[A] B is [an] A and [a] C is not [a] B', it validly follows that that C which is not [a] B is not that A which is [a] B, but it does not follow that it is not another A.[16]

Similarly, I assert that in the second figure the middle term is distributed in the negative premise, whether it be the major or the minor, but neither extremity is distributed if the premises are particular; hence, a conclusion can be inferred, but not one that is in accordance with common usage.

Therefore, finally, the rule which says that when both premises are particular or indefinite no [valid] syllogism can result is universally valid with the following condition: if the conclusion is formed in accordance with common usage and the middle term is neither a discrete term nor a common term taken in the minor proposition along with a relative pronoun of identity. And it is under these conditions that the author and Aristotle distinguish the modes of syllogisms; therefore, we also shall not say anything further about the modes of syllogisms, except when observing these conditions is concerned. Such must therefore be said about the first rule.

16. In fact, the indefinite articles should be added everywhere in these schematic phrases, but since that would render the text rather cumbersome to read, I will add them only where they seem to be critical from the point of view of the correct understanding of the text.

The second rule is easily seen [to be valid]. For whatever are said to be convertibly the same, or even numerically the same, may still validly be said to be not identical with a third; therefore, when both premises are negative, no conclusion can follow from them. For example, given that the same man is called by his first and last proper names, 'Marcus' and 'Tullius', if we say: 'No donkey is Marcus and no donkey is Tullius', this does not entail 'therefore, Marcus is not Tullius'; neither does it follow that 'Marcus Tullius is not'. Furthermore, it is also possible that two terms that are mutually exclusive, as are 'man' and 'horse', are likewise both excluded even from a third one; therefore, from two negative [premises] no affirmative [conclusion] can follow, as 'No donkey is a man and no donkey is a horse' does not entail 'therefore, a horse is a man'.

The third rule can be exemplified in the first figure. For if the major is particular and the minor is affirmative, the middle term is not distributed in either, whence nothing follows. If the major is a particular affirmative, however, and the minor is negative, then there cannot follow a direct conclusion in accordance with common usage, for the major extremity would then be distributed, whereas it was not distributed in the major proposition, given that it is affirmative. But if an indirect conclusion were inferred, then the major extremity would be the subject, which in the premise was not distributed; therefore it cannot be distributed in the conclusion, and so the conclusion cannot be universal.

We should not deny, however, that from a particular affirmative as the major, and a universal negative as the minor, a universal negative that is not in accordance with common usage can be concluded, as in: 'Some man is an animal and no donkey is a man; therefore, every donkey an animal is not'.[17] In this way, therefore, it should be clear that if the major [premise] is particular, one cannot in the first figure infer a universal conclusion, be it direct or indirect, that is in accordance with common usage, for then it would be necessary to distribute the major extremity in the conclusion.

But further, when the minor [premise] is particular, then the minor extremity is not distributed; therefore the conclusion cannot be direct and universal, for then it would be necessary to distribute that minor extremity; nor can that conclusion be negative and indirect while in accordance with common usage, for then the minor extremity would also have to be distributed. Again, if the conclusion were to be universal affirmative and indirect, the major extremity would have to be distributed, while not being distributed in

17. The sense of the conclusion is: every donkey is such that some animal is not identical with it. Of course, this is so, because there are other animals, namely, men, as is stated by the major, which are not donkeys, as is stated by the minor.

the premises. Therefore, in the first figure one can never infer a universal conclusion that is in accordance with common usage, if one of the premises is particular. But neither can this be done in the second figure. For the second figure concludes only negatively, as will be explained later, and whichever of the premises is particular, the extremity of that [premise] is not distributed; however, it would become distributed [in the conclusion], if the conclusion were a universal negative formulated in accordance with common usage, and so the consequence would be invalid. As to the third figure, we shall state later that one cannot infer a universal conclusion therein, at least in accordance with common usage. And thus the third rule is clarified.

The fourth rule is easy to explain. Since an affirmative conclusion can be inferred only by virtue of the principle that the extremities are said to be identical with one and the same thing, namely, the middle term, and since this has to be effected by means of affirmations, therefore, if the conclusion is affirmative, then both premises have to be affirmative too.

The fifth rule is also obvious, for every syllogism infers the connection of the extremities on account of their connection with the middle term, whether affirmatively or negatively, and so the conclusion has to be formed from the extremities and not from the middle term.

5.2 Chapter 2: The modes of the three figures

5.2.1 The number of modes in each figure

(1) The first figure has nine modes, four of which conclude directly and five indirectly, whereas the second figure contains four directly concluding figures, and the third six. (2) To conclude directly is to predicate the major extremity of the minor extremity in the conclusion, whereas to conclude indirectly is to predicate the minor extremity of the major in the conclusion.

The second chapter distinguishes and enumerates the modes of the three figures. And it contains four parts: the first tells us how many modes are in each figure and describes what it is to conclude directly and indirectly, the second provides a [mnemonic] verse [to help us] to find easily and to remem-

ber the number and arrangement of those modes, explaining which words of those verses indicate which figures, the third part explains this verse insofar as it indicates the formation of syllogisms, and the fourth part expounds this verse insofar as it indicates the reduction of imperfect to perfect syllogisms.

The first part has two sections, the first of which enumerates the modes of the first, as well as of the second and third figures, and the second describes what it is to conclude directly and to conclude indirectly.

The first section gives rise to the following question: Since in the first figure there are both directly and indirectly concluding modes, should not there be indirectly concluding modes also in the second and third figures, and not only directly concluding ones, and if so, then why did the author and Aristotle not enumerate those? To this I briefly reply that in the third and the second figures there are indirectly concluding modes, for in the second and third figures the figure is not changed by the transposition of the premises, but after transposing the premises the same conclusion follows as before. If the premises are transposed, however, the same conclusion that was initially direct will become indirect, and conversely.

But why did the author not speak about these indirect modes? One may say that he omitted them for the sake of brevity, for from what he has said about the first figure, one can easily see what one should say about the second and third figures.

5.2.2 A mnemonic verse

In order that we can more easily formulate and better remember the syllogisms of the three figures, we provide the following four verses:

Barbara, Celarent, Darii, Ferio, Baralipton,
Celantes, Dabitis, Fapesmo, Frisesomorum;
Cesare, Camestres, Festino, Baroco; Darapti,
Felapton, Disamis, Datisi, Bocardo, Ferison.

In these four verses there are nineteen words to indicate the nineteen modes of the three figures, so that by the first word we should understand the first mode of the first figure, by the second the second [mode], and so on for the rest. So the first two verses indicate the nine modes of the first figure, the third verse, except for the last word, indicates the four modes of the second figure, and the last word of the third verse and the whole fourth verse indicates the six modes of the third figure.

This whole part will be clear when, in the subsequent parts, the meaning of the words contained in the above-quoted four verses will have been explained.

5.2.3 Explanation of the verse insofar as it indicates the formation of syllogisms

> We should know that by the vowels A, E, I, and O we should understand four genera of propositions. By A we understand a universal affirmative, by E a universal negative, by I a particular affirmative, and by O a particular negative. Again, in each word there are three syllables, and if there are more, the rest are irrelevant, except for the letter M, as we shall see. By the first of the three syllables we should understand the major proposition, by the second the minor, and by the third the conclusion. For example, the first mode, namely, *Barbara,* has three A's, by means of which it is indicated that it consists of two universal affirmative premises that conclude to a universal affirmative, as in 'Every animal is a substance, every man is an animal; therefore, every man is a substance', and so on for the others, in keeping with [the arrangement of] the vowels in them.

The third part is also entirely clear. What is said about the irrelevance of the [final] syllables of *Baralipton* and *Frisesomorum,* however, is true insofar as they are not given here to represent some proposition but only to complete the verse. So *Baralip* would mean just as much as *Baralipton* does, and *Frisesom* as much as *Frisesomorum.*

5.2.4 Explanation of the verse insofar as it indicates the reduction of imperfect to perfect syllogisms

> Again, we should know that the first four words of the first line, which designate the first four modes of the first figure, begin with one or another of the letters B, C, D, and F, and so do all the subsequent words. And by this we should understand that all the others should be reduced to these four modes, namely, those beginning with B to *Barbara,* those be-

> ginning with C to *Celarent,* those with D to *Darii,* and those with F to *Ferio.* And we should know that in such a reduction whenever there is an S [in the "code-name" of the mode in question], it indicates that the proposition understood by the preceding vowel is to be converted simply; where there is a P, it should be converted accidentally, and when there is an M, the premises should be transposed (to transpose premises is to turn the major into the minor and conversely), and in whichever word there is a C anywhere but in the beginning, this signifies that the mode understood by that word should be reduced *per impossibile,* where to reduce *per impossibile* is to infer from the opposite of the conclusion with one of the premises the opposite of the other premise.

In this fourth part we should first ask what is the point of this reduction. And I say that the first four modes of the first figure are called 'perfect', for they are evident consequences by virtue of *dici de omni* or *dici de nullo,* as was said in the preceding chapter; but all the others are called 'imperfect', for they are not self-evident consequences, wherefore they need to be proved to be necessary consequences, and this is carried out by reducing them to those four perfect modes.

Again, we should note that the author notes here three modes of reduction, one by conversion, another by the transposition of the premises (and sometimes these two modes concur in the same syllogism's reduction, as we shall see later), and he provides as the third mode of reduction the one leading to impossibility [*per impossibile*]. But besides these Aristotle, in bk. 1 of the *Prior Analytics,*[18] indicates another mode of reduction, namely, the one by means of an expository syllogism.

We should see first how and why a reduction by conversion is valid. And in this connection I say first that, as far as the conversion of the conclusion is concerned, if the conclusion of a perfect syllogism can be converted by a valid consequence, then it is necessary that the converted proposition follow from the same premises from which the conclusion that was converted into it followed, by the principle that *whatever follows from the consequent follows from the antecedent.* Therefore it is necessary that if *Barbara* is a necessary consequence, then *Baralipton* should also be a necessary consequence; for the conclusion of *Baralipton* follows from the conclusion of *Barbara* by a necessary conversion; and so it also has to follow from the same premises as those from which the conclusion of *Barbara* followed.

From this it is clear that they are rather ignorant who believe that *Baralipton* should be reduced and proved by the conversion of a particular affirmative into a universal affirmative, for such a conversion would not be valid, but it

18. Aristotle, *Prior Analytics* I.45.51a-1–12.

is reduced and proved by the conversion of the conclusion of *Barbara* into the conclusion of *Baralipton,* namely, [by a conversion] of a universal affirmative into a particular affirmative. And *Celantes* and *Dabitis* are proved in the same way.

But where the conversion of a premise or of premises is concerned, we should say that if the premises of an imperfect syllogism can be converted into the premises of a perfect syllogism, it follows of necessity that the imperfect syllogism in question is a valid consequence for concluding the conclusion that the perfect syllogism would conclude. And this follows by the same principle as before, namely, that whatever follows from the consequent follows from the antecedent; for in the aforementioned case the premises of the perfect syllogism follow from the premises of the imperfect syllogism, whence it is necessary that the conclusion that followed from the perfect syllogism follow also from the premises of the imperfect syllogism. Thus this is how *Fapesmo* and *Frisesomorum* are proved, with a transposition of the premises.

In the same way, if one premise of an imperfect syllogism can be converted into one of a perfect syllogism, while the other premise is the same in both syllogisms, it is still necessary that whatever conclusion follows in the perfect syllogism from those premises should follow also from the premises of the imperfect syllogism; for in this case the premises of the perfect syllogism follow from the premises of the imperfect syllogism, and whatever follows from the consequent follows from the antecedent. So this is how we prove *Cesare* and *Festino,* as well as *Darapti, Felapton, Datisi,* and *Ferison;* but *Camestres* and *Disamis,* along with the conversion of the conclusion, require the transposition of the premises.

As to the second mode of reduction, which is the transposition of the premises, it is clear that the whole of the antecedent in a syllogism is a conjunction consisting of the two premises. But a conjunction consisting of two categoricals is entirely the same with respect to truth or falsity and with respect to [inferential] force no matter which of those two is put first; for it amounts to entirely the same whether we say 'Socrates runs and Plato reads' or 'Plato reads and Socrates runs'. Therefore, if the conclusion of a perfect syllogism follows from the conjunction consisting of the two premises, then it is necessary that it follow in the imperfect syllogism from the conjunction consisting of the same premises transposed.

About the third sort of reduction, which is called *per impossibile,* we should know that we shall discuss syllogisms *per impossibile* and why they are so called when we treat of the powers of syllogisms. But for the moment we assume the rule that a syllogism is a necessary consequence if from the contradictory of the conclusion with one of the premises there follows the contradictory of the other premise. Therefore, an imperfect syllogism has to be a nec-

essary consequence, if from the contradictory of its conclusion together with one or the other of the premises there results a perfect syllogism that infers the contradictory of the other premise. Hence this is how *Baroco* and *Bocardo* are proved to be valid consequences, because in the above-described manner they are turned into *Barbara.* And this reduction is called *per impossibile* not because it is impossible but because the syllogism to which it is reduced has to contain an impossible premise leading to an impossible conclusion.

Next, as for the fourth sort of reduction, it is obvious that expository syllogisms are self-evident, especially in the third figure; and all six modes of the third figure are easily proved by reducing them to expository syllogisms. For consider the following syllogism: 'Every C is A; every C is B; therefore, some B is A'. From the premises of this syllogism it follows that some C is A and the same C is B, whence it is inferred, by an expository syllogism, that some B is A; since, therefore, this conclusion follows from the premises of the expository syllogism, and those premises followed from the premises of the original syllogism, it follows that the conclusion validly followed from the premises of the original syllogism, by the rule 'whatever follows from the consequent follows from the antecedent'.

Similarly, in the case of negative syllogisms it is clear that the middle term in one of the premises has to be distributed, since one of the premises has to be universal. Therefore, it is necessary that if the premises are true then there has to be one suppositum of the middle term for which they are true; and then designating that one, we get a valid expository syllogism inferring a direct negative conclusion that is in accordance with common usage. For in any such modes the major is negative, and thus the major extremity is distributed; therefore, when the premises of that expository syllogism follow from the premises of the original syllogism, and the conclusion follows from the premises of the expository syllogism, it also has to follow from the premises of the original syllogism.

5.3 Chapter 3: About the first figure

5.3.1 Two general rules of the first figure

(1) In connection with the first figure we posit two rules. The first is that if the major is particular in the first figure, then a conclusion never fol-

lows directly. (2) The second rule is that if the minor is negative, then a conclusion never follows directly either, but one may follow indirectly, as in *Fapesmo* and in *Frisesomorum.*

The third chapter is about the first figure in particular. And it contains four parts: the first provides two general rules of the first figure, the second is about the first four modes of the first figure, the third is about *Baralipton, Celantes* and *Dabitis,* and the fourth is about *Fapesmo* and *Frisesomorum.*

The first part contains two rules. The reason for the first rule is that if the major is particular, then the middle term, which is the subject in it, is not distributed, nor is it distributed in the minor (for the minor has to be affirmative, as the second rule states); therefore, the middle term, which is predicated in it, is not distributed in it either, and we said earlier that a syllogism is not valid if the middle term is not distributed in either of the premises.

The reason for the second rule is that if the minor is negative, the major has to be affirmative, and thus the major extremity is not distributed, but in the conclusion, which has to be negative, it would be distributed, if the conclusion were to be formed in accordance with common usage.

5.3.2 *The first four modes of the first figure* (Barbara, Celarent, Darii, Ferio)

The first mode consists of two universal premises concluding to a universal affirmative, as for example: 'Every animal is a substance; every man is an animal; therefore, every man is a substance'. The second mode consists of a universal negative as the major and a universal affirmative as the minor, concluding to a universal negative, for example: 'No animal is a stone; every man is an animal; therefore, no man is a stone'. The third mode consists of a universal affirmative as the major and a particular affirmative as the minor, concluding to a particular affirmative, for example: 'Every animal is a substance; some man is an animal; therefore, some man is a substance'. The fourth mode consists of a universal negative as the major and a particular affirmative as the minor, concluding to a particular negative, for example: 'No animal is a stone, some man is an animal; therefore, some man is not a stone'.

We should note that these four modes are perfect and evident consequences, for the first and the third are obviously valid by virtue of *dici de omni,*

and the second and the fourth by virtue of *dici de nullo.* But we should realize that the four modes in the form just presented are not formally valid, for I maintain that a syllogism is formally valid if it does not have a counterinstance [*instantia*][19] under the substitution of any terms retaining the same form and arrangement of the premises and the conclusion.

For these modes do have counterinstances with ampliative terms. For example, 'Nothing dead is an animal; some man is dead; therefore, some man is not an animal'; now this syllogism exhibits an arrangement or form belonging to the fourth mode, and yet the consequence is not valid, for the premises are true and the conclusion is false. The reason for this is that from an ampliated nondistributed term the same term does not follow nonampliated, for an ampliated term is related to itself nonampliated as a superior to an inferior term, because an ampliated term has a greater extension [*ad plura se extendit*], whereas the consequence from the superior nondistributed to the inferior [term] is not valid. But in the minor proposition the term 'man' was ampliated to past [things], whereas in the conclusion it was not ampliated; this is why the consequence was not valid.

But then you might ask: "Do not these syllogisms hold by *dici de nullo?*" But I reply in the negative; for by virtue of the major premise 'Nothing dead is an animal' it is necessary that of whatever term 'dead' is truly affirmed with respect to some of its supposita, of that term 'animal' has to be truly denied in respect of the same suppositum, but if the term in question is not taken for the same suppositum, then 'animal' does not have to be truly denied of it. Therefore, this syllogism would be valid in the following form: 'Nothing dead is an animal; some man is dead; therefore, that man is not an animal';[20] but if we were to conclude: 'therefore, a man is not an animal', the inference would be invalid, for in the conclusion 'man' stands only for present [humans], and 'dead' is not verified about 'man' taken for any of these in the minor proposition.

Furthermore, the aforementioned four modes, and others as well, have counterinstances in the terms referring to the divine persons, for with these

19. Note that providing counterinstances to apparently universally valid forms of inference will play a crucial role in Buridan's showing the limitations of the validity of syllogistic forms in modal contexts.

20. Perhaps we should also insert 'dead' in the conclusion, so that we get: 'That [dead] man is not an animal', for otherwise, without the ampliative force of 'dead', it seems that the subject of the conclusion would supposit for nothing, whence it would be false. Another solution (which, as is suggested by his next remark in this paragraph, may also be what Buridan had in mind) might be that we attribute ampliated supposition to the demonstrative pronoun in the context of the whole argument, where it is clearly anaphoric in respect of an ampliated antecedent. See n. 40 below.

terms the expository syllogisms formed in the way described above are not valid. For although (speaking about the divine persons of the Father and the Son) it is true to say that God is the Father and the same God is the Son, the conclusion which says that the Father is the Son would be false. In the same way, the following syllogism in *Barbara* is invalid: 'Every God is the Son; every divine Father is God; therefore every divine Father is the Son'. Such syllogisms are invalid, where the most simple unity is the trinity of really distinct persons, for with respect to these, the following principle is not valid: 'any things that are said to be identical with numerically one and the same thing are said to be identical with each other'.

But the above-described modes are valid in the form given above where there are neither ampliative terms nor terms signifying appropriately the divine persons. But if these modes have to be rendered universally formally valid, then it is necessary to form the syllogisms, expository or otherwise, in the following manner: 'Everything that is B is A and everything that is C is B; therefore, everything that is C is A'.

Furthermore, one might query whether there are more directly concluding modes in the first figure than these four modes. For although it seems that those four modes are valid, it has not been demonstrated that there are no other valid modes. And I reply that there are no other valid modes, for the premises could be combined into sixteen modes involving various quantities and qualities, and it would be easy to show that the other twelve modes are useless combinations [*conjugationes inutiles*]. Therefore, I say that there are four combinations in various quantities, for either both premises are universal or both are particular, or the major is universal and the minor is particular, or vice versa. If both are universal, then there are four combinations in different qualities, for either both are affirmative, or both negative, or the major affirmative and minor negative, or vice versa; and the first of these modes is *Barbara* and the fourth is *Celarent;* but the second mode is not valid, for from purely negative premises nothing follows, and the third one is not valid in a direct inference, for the minor is negative. If, however, both premises are particular, then there are again four combinations in various qualities, but all of these are useless, for nothing follows from purely particular premises. But if the major is universal and the minor is particular, then, if both are affirmative, then it will be *Darii,* and if both are negative, then nothing follows, and if the major is affirmative and the minor negative, nothing follows directly, in accordance with the rules given above, and if the other way round, then we shall have *Ferio.* If, however, the major were to be particular and the minor universal, then there will again be four combinations, and all of them are useless for directly concluding in accordance with the rules provided above.

5.3.3 *About* Baralipton, Celantes, *and* Dabitis

The fifth mode consists of two universal affirmatives concluding indirectly to a particular affirmative, as in 'Every animal is a substance; every man is an animal; therefore, some substance is a man'; and it is reduced to the first mode by converting the conclusion *per accidens.* The sixth mode consists of a universal negative major and a universal affirmative minor indirectly concluding to a universal negative, for example: 'No animal is a stone; every man is an animal; therefore, no stone is a man'; and it is reduced to the second mode by a simple conversion of the conclusion. The seventh mode consists of a universal affirmative major and a particular affirmative minor, concluding indirectly to a particular affirmative, for example: 'Every animal is a substance; some man is an animal; therefore, some animal is a man'; and it is reduced to the third mode by a simple conversion of the conclusion.

From what has been said in the second chapter it is obvious that these three indirectly concluding modes are proved to be valid consequences by the aforementioned reductions, or conversions of the conclusions, it being understood, however, that it is not the conclusion of *Baralipton* that is validly converted into the conclusion of *Barbara,* but rather the conclusion of *Barbara* is that is validly converted into the conclusion of *Baralipton.* It is true, however, that the conclusions of *Celantes* and *Dabitis* are validly converted into the conclusions of *Celarent* and *Darii,* but from this it does not follow that they are valid consequences; still, this does follow from the fact that the conclusions of *Celarent* and *Darii* are validly converted into the conclusions of *Celantes* and *Dabitis.*

5.3.4 *About* Fapesmo *and* Frisesomorum

The eighth mode consists of a universal affirmative major and a universal negative minor, which conclude indirectly to a particular negative, for example, 'Every animal is a substance; no stone is an animal; therefore, some substance is not a stone'. And it is reduced to the fourth mode by converting the major *per accidens* and the minor simply, and by transposing the premises. The ninth mode consists of a particular affirmative major and a universal negative minor concluding indirectly to a particular negative, for example, 'Some man is an animal; no stone is a man; therefore, some animal is not a stone'. And it is reduced to the fourth

mode by simple conversion of the major and the minor, and by transposing the premises.

All these points are clear. But one may also declare that there are no more indirectly concluding modes. For from two particular [premises] we get four useless combinations; from two universal premises we get *Baralipton, Celantes,* and *Fapesmo,* and if both were negative, the syllogism would not be valid. And we should note that although *Fapesmo* has universal premises, it cannot conclude to a universal conclusion, for the major extremity, which has to become the subject in the conclusion, is not distributed in the major proposition. Furthermore, if the major is universal and the minor is particular, then we have *Dabitis,* given that both are affirmative; but if they are negatives, then [the syllogism] is not valid. Also, if the major were affirmative and the minor negative or vice versa, then the minor extremity would not be distributed in the premises, which, however, would have to be distributed in a negative indirect conclusion; and so such a syllogism would not be valid. Furthermore, if the major were particular and the minor universal, [the syllogism] would not be valid, were they both to be affirmative, for then the middle term would not be distributed in either of them; nor would it be valid if the major were negative and the minor affirmative, for the same reason; nor would it be valid if both were negative; but it would be valid if the major were affirmative and the minor negative, and then it would be *Frisesomorum.*

5.4 Chapter 4: About the second figure

5.4.1 Three general rules of the second figure

Next we deal with the second figure, concerning which we provide three rules. (1) The first [rule] is that from a particular major in the second figure nothing follows directly, although something can follow indirectly. (2) The second rule is that from pure affirmatives nothing follows in the second figure. (3) And from this one can conclude to the third rule, namely, that in the second figure no affirmative conclusion can be inferred.

The fourth chapter is about the second figure. It contains three parts: the first provides three rules, the second is about the first three modes of the sec-

ond figure, namely, about *Cesare, Camestres,* and *Festino,* and the third is about the fourth mode, namely, *Baroco.*

The first part contains three rules. The reason for the first rule is that when the major is a particular then the major extremity is not distributed, but were one to conclude directly and in accordance with common usage, it would be distributed in a negative conclusion, since it would become the predicate.

The reason for the second rule is that when both are affirmative, then the middle term, which is predicated in both, would not be distributed in either, and thus nothing could be inferred.

The third rule follows from the second in accordance with the rule formerly given, namely, that if one of the premises is negative, then the conclusion has to be negative.

5.4.2 *The first three modes of the second figure* (Cesare, Camestres, *and* Festino)

> The second figure contains three modes. The first consists of a universal negative and a universal affirmative concluding to a universal negative, as in 'No stone is an animal; every man is an animal; therefore, no man is a stone'. And it is reduced to the second mode of the first figure by a simple conversion of the major [premise]. The second mode consists of a universal affirmative major and a universal negative minor, concluding to a universal negative, for example, 'Every man is an animal; no stone is an animal; therefore, no stone is a man'. This is reduced to the second mode of the first figure by a simple conversion of the minor, and by the transposition of the premises. The third mode consists of a universal negative major and a particular affirmative minor, concluding to a particular negative, for example, 'No stone is an animal; some man is an animal; therefore, some man is not a stone'. And it is reduced to the fourth mode of the first figure by a simple conversion of the major.

These modes and their reductions are clear enough. But we should note that there are three indirectly concluding modes corresponding to them. For *Cesare* and *Camestres* do not only conclude directly, but also indirectly, for the reason that their conclusions are simply convertible, and since the conclusion that is converted is direct, it is necessary that the converted [proposition] with respect to the same premises be indirect. Therefore, the two modes mentioned

above, since they were indirectly concluding, are reduced to themselves concluding directly, by means of the conversion of the conclusions.

But the third mode, namely, *Festino,* does not conclude indirectly, both because it does not have a convertible conclusion and because the minor extremity in the premises is not distributed, whereas it would be distributed in the negative conclusion if it were to become the predicate. *Festino,* however, has another indirectly concluding mode corresponding to it, namely, the one that results from transposing the same premises leading to the same conclusion. For we said earlier that the transposition of the premises does not prevent the same conclusion from following as before, but it will become indirect if it was direct earlier, and vice versa. And this mode could be called Fitesmo, which consists of a particular affirmative major and a universal negative minor concluding to a particular negative indirectly; and it is reduced to *Festino* by the transposition of the premises.

5.4.3 *The fourth mode* (Baroco)

> The fourth mode consists of a universal affirmative major and particular negative minor concluding to a particular negative, for example, 'Every man is an animal; some stone is not an animal; therefore, some stone is not a man'. And it is reduced to the first mode of the first figure *per impossibile,* for if we take the contradictory of the conclusion with the major, then there follows the contradictory of the minor by *Barbara,* and we get the following syllogism: 'Every man is an animal; every stone is a man; therefore, every stone is an animal'.

We should note that this mode, *Baroco,* cannot be reduced by conversion; for the minor and the conclusion are not convertible, since they are particular negatives, and the major could be converted only into a particular, and thus both premises would be particular.

We should also note that not only *Baroco* but any other of the three other modes of the second figure as well can be reduced to the first figure *per impossibile,* taking the contradictory of the conclusion with the major to infer the contradictory of the minor. And this is how *Cesare* is reduced to *Ferio,* and *Camestres* to *Darii,* and *Festino* to *Celarent;* and anyone can see this who wishes to formulate these syllogisms.

Baroco cannot conclude indirectly, for the same reason that was mentioned in connection with *Festino.* But it also has another mode corresponding to it

that concludes indirectly, namely, the mode that has the same premises but transposed, and it would be called *Boraco,* and it is reduced to *Baroco* by the transposition of the premises.

We should realize that in the second figure there are no more modes, whether concluding directly or indirectly, but these eight, namely, four directly concluding ones and four indirectly concluding ones corresponding to these. Now, since there are sixteen combinations, four are purely from particulars and are not valid. But if both [premises] are universal, there are two useless modes, namely, the ones in which both premises are affirmative and the ones in which both premises are negative, and there are two useful modes, both for concluding directly and indirectly, namely, *Cesare* and *Camestres.* If, however, the major is universal and the minor is particular, there are still two useless modes, namely, when both [premises] are affirmative and when both are negative, and there are two other modes, namely, *Festino* and *Baroco,* that are useful for directly concluding but not for indirectly concluding. And then, if the major is particular and the minor is universal, then there are two useless modes just as before, namely, if both premises are affirmative, and if both are negative, and there are also two other useful ones, namely, *Fitesmo* and *Boraco,* which are valid in concluding indirectly but not directly, for the major extremity is not distributed in the premises, whereas it would be distributed in the direct negative conclusion, as is obvious.

5.5 Chapter 5: About the third figure

5.5.1 Two general rules of the third figure

(1) Now we turn to the third figure, concerning which we provide two rules. The first is that if the major is negative, then in the third figure nothing follows directly. (2) The second rule is that in the third figure only a particular conclusion is drawn.

The fifth chapter, which is about the third figure, has three main parts. The first provides two general rules applying to this figure, the second discusses the first four modes of this figure, and the third the two last ones.

The first part, then, contains two rules. The reason for the first is that if the minor is negative, then the major has to be affirmative, and thus the major extremity would not be distributed, but it would be distributed in the direct

negative conclusion formed in accordance with common usage. Nothing prevents syllogizing indirectly in the third figure, however, if the minor is negative, as we shall see later.

The reason for the second rule is that if both [premises] are affirmative, then neither of the extremities is distributed in the premises; therefore, neither of them can be distributed in the conclusion. If, however, one of the premises were to be affirmative and the other negative, then the extremity in the affirmative proposition is not distributed either; therefore it cannot become the predicate in a negative conclusion, for then it would be distributed, and if it were to become the subject, then this would have to be without [its] distribution, for it was not distributed in the premises.

5.5.2 The first four modes

> The third figure has six directly concluding modes. The first consists of two universal affirmatives concluding to a particular affirmative, for example, 'Every man is a substance; every man is an animal; therefore, some animal is a substance'. And it is reduced to the third mode of the first figure by converting the minor *per accidens.* The second mode consists of a universal negative major and a universal affirmative minor, concluding to a particular negative, for example, 'No man is a stone; every man is an animal; therefore, some animal is not a stone'. And it is reduced to the fourth mode of the first figure, by converting the minor *per accidens.* The third mode consists of a particular affirmative major and a universal affirmative minor, concluding to a particular affirmative, for example, 'Some man is a substance; every man is an animal; therefore, some animal is a substance'. And it is reduced to the third mode of the first figure by the simple conversion of the major and of the conclusion, and by the transposition of the premises. The fourth mode consists of a universal affirmative major and a particular affirmative minor, concluding to a particular affirmative, for example, 'Every man is a substance; some man is an animal; therefore, some animal is a substance'. And it is reduced to the third mode of the first figure by a simple conversion of the minor.

Since these modes and their reductions are obvious, we should note [only] that there are some indirect modes corresponding to them. For *Darapti, Datisi,* and *Disamis* can conclude indirectly just as well as directly, for the reason that

their conclusions are simply convertible, just as we have mentioned in connection with *Cesare* and *Camestres.*

But *Felapton* cannot conclude indirectly, for the minor extremity is not distributed in the premises and it would be distributed in an indirect negative conclusion. But there corresponds to it another mode concluding indirectly to the same conclusion from the same premises transposed, so that that mode would consist of a universal affirmative major and a universal negative minor concluding to a particular negative indirectly; and it could be called *Fapemton,* and it is reduced to *Felapton* by the transposition of the premises.

5.5.3 The two remaining modes

> The fifth directly concluding mode consists of a particular negative major and universal affirmative minor concluding to a particular negative, for example, 'Some man is not a stone; every man is an animal; therefore, some animal is not a stone'. And it is reduced to the first mode of the first figure *per impossibile;* for let us take the contradictory of the conclusion with the minor, and let us infer the contradictory of the major; then we shall get a syllogism like the following: 'Every animal is a stone, and every man is an animal; therefore, every man is a stone'. The sixth mode consists of a universal affirmative major and a particular negative minor concluding to a particular negative, for example, 'No man is a stone; some man is an animal; therefore, some animal is not a stone'; and it is reduced to the fourth mode of the first figure, by a simple conversion of the minor.

We should note that these two modes have two indirectly concluding modes corresponding to them and concluding to the same conclusions having their premises transposed; these could be called *Bacordo* and *Fisemon,* and they are reduced to *Bocardo* and *Ferison* by the transposition of their premises.

And so there are three modes concluding both directly and indirectly, namely, *Darapti, Disamis,* and *Datisi,* and there are three others that conclude only indirectly, namely, *Fapemton, Bacordo,* and *Fisemon.*[21] Nor can there be any more in the third figure, since there are sixteen combinations, and the other

21. And three more, *Bocardo, Ferison,* and *Felapton,* conclude only directly. I owe this addition to Alexander Mebane.

seven are useless, namely, four purely from particulars and other three purely from negatives: one from two universals, another from a universal major and a particular minor, and the third conversely.

Again, we should note that not only *Bocardo* but any of the other five modes of this figure can be reduced to the four modes of the first figure *per impossibile* by taking the contradictory of the conclusion with the minor and inferring the contradictory of the major. In this way *Darapti* is reduced to *Celarent* and *Felapton* to *Barbara;* for although in this reduction what is inferred is the contrary of the major, nevertheless, this is sufficient, since from this [contrary] the contradictory of the major follows immediately by subalternation. Furthermore, *Disamis* is reduced to *Celarent,* and *Datisi* to *Ferio,* and *Bocardo* to *Barbara,* and *Ferison* to *Darii.* Formulate the syllogisms, if you wish, and you will find that this is indeed the case.

5.6 Chapter 6: About nonmixed modal syllogisms

5.6.1 Recapitulation of some points about modal propositions

Before starting to talk about syllogisms consisting of modal propositions let us recall first that some [such propositions] are called divided modals, namely, ones in which the mode is the copula or it is a part of the copula, as in 'A man can run' or 'The sun is necessarily shining', and others are called composite, namely, the ones in which the mode is either the subject or the predicate, as in 'It is necessary that a man is an animal' or 'That a horse runs is possible'. We should also recall that the terms 'necessary', 'possible', and 'contingent' sometimes are taken as appropriate differences [*differentiae*] of beings, as when we say that God is necessary and all creatures are contingent; but sometimes they are taken as the appropriate differences of propositions, as when we say that some proposition is necessary, another is contingent, another is possible, and another is impossible, and this is how these names should be taken in propositions that we call composite modals, and the mode in them has to be the predi-

cate and the 'that-clause' [*dictum*][22] has to be the subject, or conversely. By a 'that-clause' we understand a propositional expression taken materially prefixed with 'that',[23] namely, one that supposits for a proposition or for some propositions, so that 'That a man runs is possible' amounts to the same as "A proposition similar to 'A man runs' is possible"; likewise, 'It is impossible that a man is a donkey' amounts to the same as "Something impossible," i.e., "Some impossible proposition is 'A man is a donkey'."

The sixth chapter is about syllogisms consisting of modal propositions without mixing modal propositions of different modes. It contains eight parts: the first recalls to our memory some points we made about modals earlier, the second describes syllogisms consisting of modals called 'composite', the third provides some assumptions concerning modals called 'divided', the fourth deals with syllogisms consisting of propositions about possibility [*de possibili*], the fifth deals with syllogisms consisting of propositions about necessity [*de necessario*], the sixth with syllogisms consisting of propositions about contingency [*de contingenti*], the seventh with syllogisms consisting of propositions about truth and falsity [*de vero et falso*], and the eighth with syllogisms consisting of some other modal propositions.

The first part is entirely clear given the points made in the eighth chapter of the first treatise. We recalled this distinction between modals, however, so that we may say some things separately of both kinds. Therefore, since it was established earlier that composite modals properly speaking are assertoric [*de inesse*], we form out of them syllogisms in every figure as we do with assertoric propositions when we make the subjects and predicates of such propositions into the extremities and the middle term of a syllogism. For example, in the first figure: 'Everything impossible is false; that a man is a donkey is impossible; therefore, that a man is a donkey is false'; in the second figure: 'Nothing impossible is true; everything necessary is true; therefore, nothing necessary is impossible'; similarly, in the third figure: 'Every [proposition] that no man is a donkey is necessary; every [proposition] that no man is a donkey is true; therefore, something true is necessary', for to say 'Every [proposition]

22. See 4.3.2 n. 55.

23. Obviously, I had to modify the text here to give a description of the English construction, instead of translating Buridan's description of the corresponding Latin construction, namely, the accusative-with-infinitive. In any case, Buridan's semantic point is preserved even in this solution, namely, that such a construction is used to refer to the corresponding proposition, so that in a *de dicto* modal proposition it can serve either as the subject or as the predicate of a mode.

that no man is a donkey is necessary' amounts to the same as saying "Every proposition similar to 'No man is a donkey' is necessary." Therefore, where such syllogisms consisting of composite modal propositions are concerned, nothing more has to be said than what has already been said about syllogisms consisting of assertoric propositions. But syllogisms are formed differently when the extremities and the middle term are the subjects and predicates of 'that-clauses' [*dicta*], so now we shall briefly discuss these syllogisms.

5.6.2 Syllogisms consisting of composite modals

(1) So, whichever premises entail some conclusion without the addition of any modes also entail the same with the addition of the modes 'true' and 'necessary'; for example, if 'Every B is A and every C is B; therefore every C is A' is valid, then so is 'That every B is A is true and that every C is B is true; therefore, that every C is A is true', and the same goes for 'That every B is A is necessary and that every C is B is necessary; therefore, that every C is A is necessary'. (2) Again, if some premises entail some conclusion without the addition of any modes, then their contradictories entail the contradictory of the conclusion with the addition of the modes 'false' and 'impossible'; for example, 'It is false that some B is not A, and it is false that some C is not B; therefore, it is false that some C is not A'. (3) Again, it is not necessary that if some premises entail some conclusion without any modes that the same would entail the same with the modes 'contingent', 'possible', 'known', 'believed', 'opined', and their likes.

The second part has to be understood as being about composite modals, and it clearly contains three rules. The first concerns the modes 'true' and 'necessary', and the reason for the rule is that necessary [propositions] entail only necessary [propositions], and true ones only true ones. And the rule should be understood with the constancy of the terms [*constantia terminorum*], namely, that the premises and the conclusion are [actually] formed. For it does not follow, absolutely speaking, that if 'Every B is A' is true and 'Every C is B' is true, then 'Every C is A' is true, for it might happen that the premises are true and the conclusion is not true, for it [simply] is not [i.e., does not exist]. And the two other rules are to be similarly understood.

The second rule concerns the modes 'false' and 'impossible', and it is proved by reducing it to the previous rule. For if a proposition is true, then it fol-

lows that its contradictory is false and conversely. Similarly, if a proposition is necessary, then it follows that its contradictory is impossible, and conversely. Therefore, the consequence 'It is false that some B is not A; therefore, it is true that every B is A' is valid, and so too is the consequence 'It is false that some C is not B; therefore, it is true that every C is B', which [two] entail 'It is true that every C is A', this being a conclusion that further implies 'It is false that some C is not A', and this is why this followed from the premises involving falsity, for whatever follows from the consequent follows from the antecedent. And in this way a syllogism from impossible propositions would be reduced to a syllogism from necessary ones.

The third rule, insofar as it concerns the modes 'possible' and contingent, is made manifest by a counterinstance. For it is possible and contingent that everything running is a horse, and it is possible and contingent that every man is running; however, it is not possible, nor is it contingent, that every man is a horse.

But you might object that since from something possible something impossible does not follow, if the premises are possible, then the conclusion has to be possible. I reply that if the antecedent is sufficient to infer that some conclusion is possible, then the consequent has to be possible. But [in this case] neither of the premises is sufficient to infer the conclusion; rather, it is the whole conjunction consisting of both premises that is the sufficient antecedent. Therefore, if it is possible, then the conclusion is [also] possible; hence the following is valid: 'It is possible that every B is A and every C is B; therefore, it is possible that every C is A'. But it often happens that a whole conjunction is impossible when any member thereof is possible, as for example the following is impossible: 'Socrates runs and Socrates does not run', even though either categorical is possible.

As for 'known' and 'believed', it is obvious that perhaps someone knows that every B is A and also knows that every C is B, but does not arrange them and connect them in a syllogism; therefore he does not know that they imply the conclusion 'Every C is A', and thus, his knowing the first two [propositions] is compatible with his doubting the third, or even with his not thinking of it at all.

5.6.3 Some assumptions concerning divided modals

> Where syllogisms consisting of divided modal propositions are concerned, we have to remember that in divided propositions with the modes 'necessary', 'possible', and 'contingent', the subjects are ampliated to supposit not only for things that exist, but also for things that can exist. Therefore, the proposition 'Every B can be A' by virtue of its proper meaning [*de virtute sermonis*] is equivalent to 'Everything that is or can be B can be A'; and similarly, 'Everything creating is necessarily God' is equivalent to 'Everything that is or can be creating is necessarily God'. But sometimes this kind of ampliation is removed by assertoric verbs [*verba de inesse*] added to the subjects, as when I say 'Everything that is B can be A', the subject 'B' supposits only for present things, namely, things that exist. Again, among these divided propositions the negative ones have to be distinguished according to whether the negation applies to the mode [*cadit super modum*], as in 'B cannot be A', or whether it comes after the mode, as in 'B can not-be A'.

These points were made in the earlier treatises; therefore they are presented here only by way of a reminder. But we should know that Aristotle, in bk. 1 of the *Prior Analytics,*[24] appears to distinguish the senses of 'B happens to be A' as well as of 'B can be A'; for the sense of 'B can be A' in one way is 'What can be B can be A', whereas in another way it is 'What is B can be A'. It seems to me, however, that by virtue of its proper meaning this proposition need not [have its senses] distinguished; rather, it is to be absolutely conceded if it is true for one suppositum of 'B', whether it exists or it can exist, since it suffices for the truth of a particular or an indefinite [proposition] that it be true for [at least] one suppositum. But the [proposition] 'Every B can be A' would be absolutely false if only one suppositum of 'B' provided a counterinstance, whether it be one of those that *are* B or those that *can be* B. Therefore, if someone were to remove the ampliation in accordance with proper meaning, he would have to add an assertoric verb, as was said. So it is without this distinction that I intend to discuss the modes of syllogizing from such divided modal propositions.

But, again, with regard to what I said about double negatives, I said, in the last chapter of the first treatise,[25] that if the negation precedes the mode 'possible', then the proposition should not, properly speaking, be said to be 'about possibility', but rather 'about impossibility', for 'not possible' is equivalent to

24. Aristotle, *Prior Analytics* I.13.32b26–32.

25. See 1.8.9.

'impossible', or it should be called 'about necessity', for 'not possible to be' is equivalent to 'necessary not to be', and 'not possible not to be' is equivalent to 'necessary to be'. Similarly, propositions in which the negation precedes the mode 'necessary' are not to be said to be 'about necessity', properly speaking, but 'about possibility'; for 'not necessary to be' is equivalent to 'possible not to be', and 'not necessary not to be' is equivalent to 'possible to be'.

We call therefore propositions such as 'B can be A' and 'B can not-be A' propositions 'about possibility', and propositions such as 'B has to be A' and 'B has to not be A' propositions 'about necessity'. And it will be enough if we discuss these and omit those in which the negation precedes the mode, for all those in which the negation precedes the mode have their equivalent in which the negation does not precede the mode.

In the same fashion, it will be enough to discuss propositions about possibility and necessity, omitting those about impossibility, for 'impossible to be' is equivalent to 'necessary not to be', and 'impossible not to be' is equivalent to 'necessary to be', and, similarly, 'not impossible to be' is equivalent to 'possible to be', and 'not impossible not to be' is equivalent to 'possible not to be'. Therefore, henceforth by 'negatives about necessity' or 'about possibility' we shall mean only those in which the negation follows the mode, and not those in which it precedes it.

5.6.4 Syllogisms with both premises about possibility

> Therefore, in the first and in the third figure all the modes are valid with both premises about possibility that were valid with both premises about actuality [*de inesse*], but in the second figure nothing follows with both premises about possibility.

The present part discusses syllogisms with both premises about possibility, and first we clarify what was said about the first figure. Let us construct a syllogism in *Barbara* in the following manner: 'Every B can be A; every C can be B; therefore, every C can be A'. And it is obvious that the syllogism is valid by virtue of *dici de omni,* if, in accordance with what has been said, and taking ampliation into account, these propositions are analyzed as follows: 'Everything that can be B can be A and everything that can be C can be B; therefore, everything that can be C can be A'. For the major, by virtue of *dici de omni,* signifies that of everything of which 'B' can be predicated, 'A' can also be predi-

cated, and the minor states that of everything of which 'C' can be predicated, 'B' can also be predicated; therefore it manifestly follows that of everything of which 'C' can be predicated 'A' can also be predicated, and this is what the conclusion signified.

Also, in *Celarent* there will be a syllogism such as the following: 'Every B can not-be A; every C can be B; therefore, every C can not-be A'. And it holds by virtue of *dici de nullo,* as is clear in the following analysis: 'Everything that can be a B can not-be an A, and everything that can be a C can be a B; therefore, everything that can be a C can not-be an A'; for the major, by virtue of *dici de nullo* or by virtue of *dici de omni* negatively, designates that of everything of which 'B' can be predicated 'A' can be denied, and the minor designates that of everything of which 'C' can be predicated 'B' can be predicated; whence it follows that of everything of which 'C' can be predicated 'A' can be denied, and this is what is signified by the conclusion, 'Everything that can be C can not-be A'.

A syllogism in *Darii* holds in the same way by *dici de omni* just as it does in *Barbara,* and a syllogism in *Ferio* does in the same way as a syllogism in *Celarent.* For all that matters here is that the minor extremity is taken universally or particularly under the middle term distributed in the major proposition.

In the third figure all modes, except *Bocardo,* are proved by reduction to the first figure, just as they were proved with assertoric propositions [*de inesse*]. For it was said in the first treatise that affirmative propositions about possibility are converted just as are assertoric ones, namely, a universal affirmative into a particular affirmative and a particular affirmative into a particular affirmative.

Furthermore, all modes of the third figure, *Bocardo* as well as others, can be proved by exposition. For if, using affirmative propositions, I say 'Every C can be A and every C can be B; therefore, some B can be A', it is necessary, by virtue of the premises, to concede that some one and the same C can be A and can be B; therefore, pointing to that C, one can argue as follows: 'This C can be A and the same C can be B; therefore, what can be B can be A'. And the same goes for *Disamis* and *Datisi,* for, because of the distribution of the middle term in one of the premises, it follows that some one and the same C can be A and can be B, and then one would proceed as above.

The same goes also for the negative modes, as in *Bocardo,* though this appears less evident. For if some C can not-be A and every C can be B, then it follows that some one and the same C can not-be A and can be B; therefore, if that C were to be pointed out and we were to say, 'This C can not-be A and the same C can be B', then we would clearly conclude that something that can be B can not-be A, and this is what the conclusion signifies that is concluded in *Bocardo* signifies, namely, 'Some B can not-be A'.

Finally, we can declare that in the second figure nothing follows. For if I say, in *Cesare,* 'Every God can not-create and every First Cause can create', it does not follow that 'therefore, the First Cause can not-be God', for the premises are true and the conclusion is false; and the reason is that the same thing is in potentiality toward opposites.[26]

But (so as to avoid a later return to this topic) we should also consider that if in propositions about possibility the ampliation of the subjects is prevented by the addition of [the phrase] 'that is', then no syllogisms are valid. For [with this addition] we have a counterinstance to *Barbara:* for if we suppose that at present every horse is running, then it is true that everything that is running can be a horse, and everything that is a man can be running, yet, it does not follow that 'therefore, everything that is a man can be a horse'. In a similar manner, in *Celarent,* assuming that the sun is at present under our hemisphere, the following premises are true: 'Everything that is a heavenly body [*planeta*] above our hemisphere can not-be the sun' and 'Every greatest heavenly body can be a heavenly body above our hemisphere'; still, it does not follow that 'therefore, every greatest heavenly body can not-be the sun'.[27]

Again, also in the third figure, in *Darapti,* the following does not follow: 'Everything that is God can be the First Cause, and everything that is God can be creating; therefore, something that is creating can be the First Cause', for it is possible that although the premises are true the conclusion is false, for in a situation in which God were in fact not creating, the subject of the conclusion would supposit for nothing, and therefore the conclusion would be false. In a similar manner, with the same terms, there is a counterinstance to *Disamis,* turning the major into a particular, and to *Datisi,* turning the minor into a particular. Likewise to *Felapton* there is a counterinstance, assuming that the sun is above our hemisphere and all the other heavenly bodies are under our hemisphere. For the following syllogism is not valid: 'Everything that is the moon can not-be the sun, and everything that is the moon can be a heavenly body shining above our hemisphere; therefore, everything that is a heavenly body shining above our hemisphere can not-be the sun', for the premises are true and the conclusion is false.

It is true, however, that in the third figure syllogisms consisting of such premises without [the phrase] 'that is', namely, in which ampliation is not pre-

26. That is to say, the same thing, the First Cause, i.e., God, has the power to create and also the freedom not to create. But of course, the First Cause is necessarily God, so the First Cause cannot not-be God.

27. The point is that what actually is the greatest heavenly body, the sun, cannot not-be the sun, even if, of course, it could be above our hemisphere, although every heavenly body currently above our hemisphere can not-be the sun.

vented, would be valid; and this could be proved by exposition. But in the first figure they would not be valid in this way, as is clear from their counter-instances, presented above.

5.6.5 Syllogisms with both premises about necessity

Syllogisms with both premises about necessity are valid in all the modes of the three figures in which the assertoric syllogisms were valid.

First we should realize that [such a syllogism] in the first figure is valid by virtue of *dici de omni,* considering that from every proposition about necessity there follows a proposition about possibility, retaining the same quantity of the subject and the quality of the proposition; for it follows that 'it has to be; therefore, it can be', or even 'it has not to be; therefore, it can not-be', for there is a subalternation between the modes, as was said elsewhere.

Let us then construct a syllogism in *Barbara* in the following manner: 'Every B has to be A, and every C has to be B; therefore, every C has to be A' and analyze the propositions as follows: 'Everything that can be B has to be A and everything that can be C has to be B; therefore, everything that can be C has to be A'. Then, therefore, by virtue of *dici de omni,* the major signifies that of whatever 'B' can be predicated 'A' has to be predicated, and the minor signifies that 'B' not only can be but rather has to be predicated of everything of which 'C' can be predicated; therefore, it follows that 'A' has to be predicated of everything of which 'C' can be predicated, and this is what the conclusion signified.

We declare in a similar, or analogous, manner that *Celarent* is valid by virtue of *dici de nullo,* namely, 'Every B has not to be A and every C has to be B; therefore, every C has not to be A'. For if we analyzed this as 'Everything that can be B has not to be A and everything that can be C has to be B, etc.', it is clear that the major proposition designates that 'A' is necessarily denied of everything of which B can be predicated, etc.'.

But syllogisms of the second figure, namely, *Cesare, Camestres,* and *Festino,* are reduced to the first figure by conversions, just like the assertoric ones, for it was said in the first treatise that universal negatives about necessity are converted simply. *Baroco,* however, is reduced to *Barbara per impossibile,* where a mixture of the necessary and the possible is concerned, and this will be shown to be valid later. For example, let us consider the following [syllogism] in *Baroco:* 'Every B has to be A; some C has not to be A; therefore, some C has

not to be B'—the contradictory of the conclusion is 'Every C can be A'. Then let us take with it the major, and let us construct a syllogism as follows: 'Every B has to be A and every C can be B'; from this it follows that 'therefore, every C has to be A', and, consequently, 'Every C can be A', and this contradicts the minor of the previous syllogism.

All modes of the third figure can be made manifest by exposition but not by conversions, for affirmative propositions about necessity are necessarily converted into others about necessity, as was established earlier.

5.6.6 Syllogisms consisting of propositions about contingency

> About contingent propositions we say that in the first figure, if both premises are contingent and the major is universal, then all syllogisms are valid, whether both premises are affirmative or both are negative, or whether only one of them is affirmative and the other is negative, no matter which one is negative. Similarly, in the third figure all syllogisms are valid, provided that one of their premises is universal. In the second figure, however, no [such] syllogism is valid.

In the first figure it is obvious that *Barbara* is valid by virtue of *dici de omni.* Let us construct a syllogism in the following manner: 'Every B happens to be A and every C happens to be B; therefore, every C happens to be A'; and let us analyze it thus: 'Everything that can be B happens to be A and everything that can be C happens to be B; therefore, everything that can be C happens to be A'. For the major signifies that of everything of which 'B' can be predicated 'A' happens to be verified, and the minor designates that of everything of which 'C' can be predicated 'B' happens to be verified; therefore it is correctly concluded that everything that can be C happens to be A. And in this way it is also clear that *Darii* validly concludes to a particular.

Having conceded this much, it is obvious that all syllogisms from negative premises are valid, still assuming that the major is universal, for all of them are reduced to *Barbara* and to *Darii* by the conversion of the negatives into the opposite quality. For every negative proposition about contingency, provided that the negation does not precede the mode, is equivalent to the affirmative of the same quantity.

In the third figure *Darapti, Disamis,* and *Datisi* are made manifest by exposition, and it is to these modes that all syllogisms with negative premises are

reduced by the conversion of those negatives into propositions of the opposite quality.

In the second figure, however, nothing is valid. A counterinstance [to this figure] is provided by the following: from 'Every man happens to sleep, and every donkey happens to sleep', it does not follow that 'therefore, every donkey happens to be a man'; and if such a syllogism is not valid from affirmative premises, then it follows that it is not valid from negative premises either, because, as has been said, every negative is equivalent to the [corresponding] affirmative.

Now, furthermore, even as we spoke about the prohibition of ampliation by [the phrase] 'that is', we can also speak briefly about using 'that is' in propositions about necessity and contingency. I say, therefore, that a syllogism with two necessary premises with 'that is' is valid in the first and in the third figures just as it would be with assertoric premises, but in the second figure it is not valid. For in the first figure it is valid by virtue of *dici de omni* or *dici de nullo.* If I say: 'Everything that is B has to be A and everything that is C has to be B; therefore, everything that is C has to be A', it is clear that the minor 'Everything that is C has to be B' entails 'Everything that is C is B', and then the minor extremity is directly subsumed under the distribution of the middle term in the major by saying: 'Everything that is B has to be A and everything that is C is B', whence it directly follows that 'therefore everything that is C has to be A'; and so this also followed earlier, since whatever follows from the consequent follows from the antecedent.

But in the second figure we find the following counterinstance: 'Everything that is a heavenly body [*planeta*] in the east has to be the sun and everything that is a heavenly body in the west has to not-be the sun'; these premises are true, provided that the only heavenly body in the east is the sun, yet, the conclusion would be false that would say: 'therefore, what is a heavenly body in the west has to not-be a heavenly body in the east'.

The syllogisms in the third figure would be proved by exposition. For let us designate, by virtue of the major and the minor some C, which has to be A and which also has to be B; from this it follows that something that has to be B has to be A, from which it further follows that something that is B has to be A, for it follows that if something has to be B then it is B. Therefore, even if the inference 'Someone creating has to be God; therefore, someone creating is God' is not valid, the inference 'What is creating has to be God; therefore, He is God' is.[28]

28. For in the first inference 'creating' in the premise is ampliated to refer to what is or can be creating, i.e., to God even before creation, whereas in the conclusion it cannot refer to anything before creation, not even to God, whence the premise is true and the conclusion

As for [propositions] about contingency I say that a syllogism [involving such propositions] is not valid with [the phrase] 'that is' added, if both premises are contingent. For there is a counterinstance to the first figure, provided that at present no animal is asleep, except for two strong horses, which are very much able to run, and then let us form the following syllogism: 'Everything that is asleep may [*contingit*] run, and everything that is an animal without feet may be asleep; therefore, everything that is an animal without feet may run'; obviously, the premises are true and the conclusion is false.

In a similar manner, there is a counterinstance also in the third figure, provided that at present no animal is asleep, for everything that is an animal may be awake, and everything that is an animal may be asleep; from this it does not follow that 'therefore; something that is asleep may be awake', for this conclusion is false, because its subject supposits for nothing, and the premises were true.

Thus if someone wants to take the subjects of modal propositions only for things that exist at present, the ways in which he can and the ways in which he cannot construct syllogisms are obvious.

5.6.7 Syllogisms consisting of propositions about truth and falsity

> Concerning truth and falsity we should say that propositions about truth and falsity in the divided sense are either nonsensical or equivalent to those about actuality [*de inesse*]; therefore, just as syllogisms are constructed with assertoric propositions [*de inesse*], so too are syllogisms constructed with such propositions, in an analogous manner.

I say "either nonsensical," because if I say '[For] every man, [it is] true [that he] is an animal', and then if the sense of this is that the proposition 'Every man is an animal' is true, then it is not the divided sense, whereas if the terms are taken significatively, then neither a true man is to be an animal, nor is a false man to be a donkey, for truth or falsity applies only to the combination of concepts [in a proposition], as is clear from bk. 6 of the *Metaphysics*.[29] And if someone were to provide another sense, then this would only come about

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is false. But in the second inference 'creating' is restricted to the present time, so it can refer to God only after (and during the continuous) creation, just as in the conclusion.

29. Aristotle, *Metaphysics* VI.4.1027b18ff.

in terms of signifying the same [*similiter*] by '[For] a man, [it is] true, [that he] is an animal' and 'A man is an animal', and by '[For] every man, [it is] false, [that he] is a donkey' and 'No man is a donkey'. In this way, therefore, reducing such propositions about truth and falsity to assertoric propositions or to composite ones about truth and falsity, it is obvious from what has been established how one should construct syllogisms with them.[30]

5.6.8 Syllogisms consisting of some other modal propositions

(1) Many other modes are often assigned that render propositions modal, such as 'known' [*scitum*], 'opined' [*opinatum*], and 'believed' [*creditum*], but to simplify matters I will talk only about 'known' and 'believed'. (2) I say, therefore, that with 'known' the syllogisms of the first and third figures are valid, but not those of the second. (3) With 'believed' no syllogisms of any figure are valid.

In this part there are three sections. The first, which states the aim [of this part], is clear. And I am talking about 'known' and 'believed'[31] because the principal intention of logic is to deal with syllogisms, and knowledge is the goal of demonstrative syllogisms, and opinion is that of dialectical syllogisms.

The second section is about knowing, and this is initially clarified with respect to the first figure, assuming the rule that every proposition about something known, with the addition of [the phrase] 'that is', entails an assertoric [*de inesse*] proposition of the same quality and quantity, be it affirmative or negative, as long as the negation does not affect the mode. For example, the inference 'Everything that is B I know to be A; therefore, every B is A' is valid; similarly, the following is also valid: 'Everything that is B I know not to be A; therefore, no B is A', for nothing can be known except by means of a true proposition; if therefore everything that is B I know to be A, then it is neces-

30. Apparently, having established that propositions with 'true' and 'false' cannot be sensibly analyzed in the divided sense in such a manner that 'true' and 'false' should apply to the supposita of their subjects, Buridan's strategy here is to take the divided senses of such propositions to be either the same as the corresponding composite senses, or to be the same as the senses of the corresponding assertoric propositions, which then takes care of the issue of syllogisms that can be formed with them.

31. Although Buridan will use *opinor* (opine) in the examples to follow, in the translation in this context I will use the more natural 'believe'.

sary that this be by means of a true proposition in which 'A' is predicated of a term that supposits for everything that is B.

Because the verb 'know' ampliates the subject to supposit not only for present things, however, but also for future and past ones, therefore, if [the phrase] 'that is' is not added, then it seems to me that it does not follow that 'Every B I know to be A; therefore, every B is A', whereas it does follow that 'therefore, whatever was, is, or can be B is A'. For example, if God were at present to create nothing anew, I would nevertheless concede the following proposition: 'Everything creating anew I know to be God', for whatever is, was, or can be creating anew I know to be God; still, the proposition 'Everything creating anew is God' would be false.[32] And from this I infer the corollary that although I know that every man is an animal, nevertheless, it does not follow that every man is known by me to be an animal; for then it would follow that every man, whether alive or dead or yet to be born, would be known by me to be an animal, which is false.[33]

And in accordance with this we have to modify what was said in the *Sophismata,* in sophism 13, chapter 4.[34] For there it was conceded that the following inference is valid: 'I know that every triangle has three angles equal to two right angles; therefore, every triangle I know to have three angles equal to two right angles', which is not true, unless this locution is taken in material supposition, or the conclusion is understood to be taken together with [the phrase] 'that is' so as to assert, 'therefore, everything that is a triangle I know to have three angles equal to two right angles'. But what was said there was sufficient for dealing with the question at issue there, for we were not dealing with ampliations, but only with appellations.

After having seen these points, it is obvious that the following syllogism is valid by virtue of *dici de omni:* 'Every B I know to be A, every C I know to be B; therefore, every C I know to be A'. For the major is equivalent to 'Everything that is, was, or can be B I know to be A', and from the minor it follows that whatever is, was, or can be C, I know to be B; whence it should be inferred that 'therefore, whatever is, was, or can be C, I know to be A'.

In the third figure syllogisms are proved by exposition. For if some C I

32. This is stated on the assumption that nothing is actually creating anew.

33. I cannot know of a dead or a yet-unborn man that he is an animal, for a dead or an as-yet-unborn man is not an animal (he only was or will be an animal).

34. This reference seems to be an interesting indication of the fact that the manuscripts we have reflect a text that was revised a couple of times by Buridan himself over the course of his teaching career. Also, his treatment of the same problem here as well as in the *Sophismata* and *On Suppositions* seems to indicate that he had been grappling with the problem for quite some time before he arrived at his final, definitive solution.

know to be A and the same C I know to be B, then it follows that a B I know to be A. For from the minor 'A C I know to be B' it follows that a C is B, and then the syllogism is manifest as follows: 'A C I know to be A and that C is B; therefore, a B I know to be A'.

In the second figure, however, the syllogisms are not valid, because it would be necessary to make the subject of [one of] the premises into the predicate of the conclusion, and this cannot be done in a valid consequence, for in such a proposition, which concerns knowing, the predicate appellates its concept [*ratio*] and the subject does not. For example, let us construct the following syllogism: 'Every elephant you know not to be risible, and every man you know to be risible; therefore, every man you know not to be an elephant'. But it is possible to posit a case in which the premises are true and the conclusion is false, namely, if you have never seen an elephant, nor have ever thought of it in terms of the concept to which the name 'elephant' is subordinated. For then the conclusion would be false, since its predicate would appellate the concept of 'elephant', which you do not have, nor did have, but the premises would indeed be true; for the minor is conceded to be true, and the major would be proved as follows: every brute you know not to be risible and every elephant is a brute; therefore, every elephant you know not to be risible.[35]

The third rule is about 'believed', which is obvious in the second figure, just as was obvious in the case of 'known'. But so as to deal with the other figures I posit the case in which I see a stone from afar and I believe it to be an animal; at the same time, however, every stone I also believe to be inanimate. Then let us construct an expository syllogism with true premises and a false conclusion thus: 'This stone I believe to be inanimate, and this stone I believe to be an animal; therefore, an animal I believe to be inanimate'.

Likewise, in the first figure there would be true premises and a false conclusion in the following way: 'Every animal I believe to live; a stone I believe to be an animal; therefore, a stone I believe to live'. For even if from certain premises there follows a conclusion, it is not necessary that if I believe the premises, then I must believe the conclusion, just as was also said elsewhere that it is not necessary that if the premises are known, then the conclusion is known.[36]

35. Of course, it would still not follow that you know that every elephant is not risible (i.e., that every elephant is not able to laugh), since, not having the concept of elephants at all, you would not even know that all elephants are brutes. Since, however, it is true of every brute whatsoever that you know that it is not able to laugh (because of every brute you know that it is not a man, and you also know that only men are able to laugh), it follows that also of every elephant you know the same.

36. That is to say, Buridan here denies the (absurd) thesis of "logical omniscience" (accord-

5.7 Chapter 7: On mixed modal syllogisms

5.7.1 Six rules concerning mixed modal syllogisms

(1) Next we should briefly speak about syllogisms in which modal premises of diverse modes are mixed together; we shall speak only about the modes 'possible', 'necessary', and 'contingent', for Aristotle discussed only these. And we should first put forth some general rules. (2) The first is that every assertoric proposition entails a proposition about possibility, retaining the same terms and the same quality, but a universal follows only with the addition in the consequent of the phrase 'that is'. (3) The second rule is that any proposition about necessity or about contingency entails a proposition about possibility retaining the same quality and the same quantity. (4) The third rule is that whatever conclusion follows from premises about possibility, the same follows from premises about necessity or contingency, or even from premises one of which is about possibility and the other is about necessity or contingency, other things remaining the same.[37] (5) The fourth rule is that whatever premises entail a conclusion about necessity or about contingency, the same entail a conclusion about possibility. (6) The fifth rule is that every conclusion about necessity entails an assertoric conclusion taking the subject with a relative [pronoun] of identity, but otherwise it does not. (7) The sixth rule is that either quality about contingency entails either quality about possibility.

The seventh chapter is about mixing [various modal and nonmodal premises], as is proposed at the beginning. It contains seven parts: the first sets forth the intended topic [of discussion] along with six rules, the second discusses mixing the assertoric with the possible, the third, the assertoric with the necessary, the fourth, the assertoric with the contingent, the fifth, the possible with the necessary, the sixth, the possible with the contingent, and the seventh, the necessary with the contingent [premises].

The first part has six sections, the first of which—the one setting forth the topic—is clear in itself. Concerning the first rule we should consider that 'is

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ing to which, e.g., by knowing the axioms one should know all conclusions of mathematics): $(p \rightarrow q) \rightarrow (Kp \rightarrow Kq)$. Of course, he also denies the corresponding thesis concerning belief: $(p \rightarrow q) \rightarrow (Bp \rightarrow Bq)$.

37. That is, the other parts of the propositions in question remaining unchanged.

possible' is more general than 'is'; for, in an affirmative as well as in a negative proposition, possibility follows from being; whence the following is valid: 'is, therefore, possibly is'; and the same goes for 'is not; therefore, possibly is not'. Nevertheless, a universal [proposition] about actuality [*de inesse*] does not imply a universal [proposition] about possibility [*de possibili*], for the subject of the one about actuality is less extended [*minus amplum*] than that of the one about possibility, and a [proposition with a] less extended distributed [subject] does not imply [one with a] a more extended one. Therefore, if no animals except horses were running, then the following [proposition] would be true: 'Everything running is a horse', but the following would be false: 'Everything running can be a horse', for it is equivalent to: 'Everything that is or can be running can be a horse', which is clearly false.[38] If, however, ampliation were impeded by the addition of 'that is', then the consequence would be valid, for whatever is, can be; thus the following is valid: 'Everything running is a horse; therefore, everything that is running can be a horse'.

The reason for the second rule is that 'possible' is more general [*communius*] than 'necessary' or 'contingent', for whatever is necessary or contingent is possible, but not conversely. And a universal [proposition] about necessity or contingency implies not only a particular but also a universal [one] about possibility, because 'possible' does not ampliate the subject more than does 'necessary' or 'contingent'.

The third rule follows from the second, because whatever follows from the consequent follows from the antecedent. The fourth rule also follows from the second, because from whatever the antecedent follows, the consequent also follows.

The fifth rule was explained in another chapter;[39] for the following is a valid implication: '[Something] creating is necessarily God; therefore, that creating [thing] is God', but from this it does not follow that 'therefore, [something] creating is God'.[40]

The sixth rule is valid on the grounds that a proposition about contingency is converted into its opposite quality. Since, therefore, an affirmative [proposition] about possibility follows from an affirmative [one] about contingency, it has to follow also from the negative [one] about contingency, and since the

38. Clearly, a dog could be something running, yet a dog could not be a horse.

39. See 5.6.7 n. 28.

40. The point is that the necessary proposition, because of the ampliation of its subject, is true, even when God is actually not creating, i.e., before the creation of anything. But the relative pronoun of the first conclusion picks up the suppositum of that ampliated subject even in the nonampliative context of this conclusion, whereas the subject of the second conclusion does not have such a relative pronoun, whence it is false when God is not creating.

negative about possibility follows from the negative about contingency, it also has to follow from the affirmative, and thus both have to follow from both.

And from this it is clear that 'contingently' entails 'not necessarily', and also 'not impossibly', whereas 'necessarily' and 'impossibly' entail 'not contingently'. For if B is contingently A, then it follows that B is possibly A, whence B is not impossibly A; and also, if B is contingently A, then it follows that B is possibly not A, whence B is not necessarily A.

Hence it also follows that a proposition about contingency is equivalent to a proposition about necessity and one about impossibility when these are negated in a conjunction, and it contradicts a proposition about necessity and one about impossibility when these are joined in a disjunction, not negated, but having the quantity of the proposition changed; for example, the proposition 'B is contingently A' is equivalent to 'B is not necessarily and is not impossibly A', and it contradicts 'Every B is necessarily or impossibly A'. In the same way, a proposition about contingency is equivalent to a proposition about the possibility of being and the possibility of not being joined in a conjunction, and it contradicts their disjunction, putting the negations before the modes and changing the quantity of the propositions. For example, the proposition 'Every B is contingently A' is equivalent to 'Every B is possibly A and is possibly not A', and it contradicts the proposition 'Some B is not possibly A or is not possibly not A' [i.e., 'Some B cannot be A or cannot not-be A']. And thus the issue of the equivalence and opposition of a proposition about contingency to other modals should be somewhat clearer.

5.7.2 Mixing the assertoric with the possible premises

If therefore one of the premises is about actuality and another about possibility, then many rules are to be provided. (1) The first is that some syllogisms in the second figure are not valid. (2) The second rule is that in none of the figures does a conclusion about actuality follow. (3) The third rule is that in the first figure syllogisms are not valid, if the major is about actuality. (4) The fourth rule is that in the first figure a universal conclusion can be inferred only with the addition of 'that is'. (5) The fifth rule is that in the first figure if the major is about possibility, then a particular conclusion about possibility follows. (6) The sixth rule is that in the third figure affirmative syllogisms are valid, if the proposition about

possibility is universal, but otherwise they are not. (7) The seventh rule is that in the same figure negative syllogisms are valid if the negative proposition is universal and about possibility, but otherwise they are not; whence it follows that *Bocardo* is not valid.

It would be extremely tedious to discuss one by one all combinations of such mixtures [of premises]. For, since in any figure there are sixteen combinations using propositions about actuality [*de inesse*], with such mixtures we hence have to have thirty-two, for they are doubled, since any combination could have either the major about actuality and the minor about possibility, or conversely. Therefore, I reduced all my points to seven short rules in this part.

The first rule is clear on the basis of the counterinstance provided by the terms 'creating', 'God', and 'First Cause', so that 'creating' is the middle term, 'God' is the major extremity, and 'First Cause' is the minor extremity. For in whichever way you may combine these, it is possible that [the premises] be simultaneously true while the conclusion, which would say that the First Cause can not-be God, would always be false.

The reason for the second rule is that 'can be' does not imply 'is'. Whence it immediately follows that if one of the premises is about possibility, then a conclusion about actuality cannot be inferred; for the premise about possibility can be true of things that can be but not true for things that are, whereas the conclusion about actuality has to be true of things that are.

The reason for the third rule is that since in the major about actuality the middle term is distributed only for things that actually exist, although perhaps the minor about possibility would not be true for things that actually exist but [only] for those that can exist, the minor extremity in that case would not be subsumed under the distribution of the middle term. Therefore, there is a counterinstance to the affirmative [syllogisms], for example: 'Everything running is a horse; every man can be running; therefore, every man can be a horse'; and there is also a counterinstance to the negative ones, for example: 'Nothing creating is God; every First Cause can be creating; therefore every First Cause can not-be God'.

It is true, nevertheless, that Aristotle, in bk. 1 of the *Prior Analytics*,[41] distinguishes between two types of propositions about actuality. One type [he calls] "about actuality absolutely" [*de inesse simpliciter*], and another type [he calls] "about actuality as of now" [*de inesse ut nunc*]. And he calls those "about actuality as of now" that are about actuality [*de inesse*], and are true but contingent and not necessary, and he calls those "about actuality absolutely" that

41. Aristotle, *Prior Analytics* I.15.34b7–10.

are necessary.[42] Now, then, if in this mixture the major of the first figure is about actuality as of now, the syllogism is not valid, as was clear from the previous examples. But there is no counterinstance wherein the major is about actuality absolutely, the reason being that a proposition about actuality that is necessary entails a proposition about possibility. For example, the following [inference is valid]: "This is necessary: 'Every B is A'; therefore, every B can be A"; and then we would have a perfect syllogism concluding to one universal about possibility from premises that are both about possibility. This [consideration] notwithstanding, however, it is obvious that the syllogism is not formally valid if the major is about actuality but only valid *ex hypothesi,* i.e., with the assumption that the major is necessary.

The reason for the fourth rule is that a universal minor about actuality does not entail a universal about possibility but only a particular, as was said in the first part of this chapter, and that the minor extremity is taken in a more ampliated fashion in the conclusion about possibility than in the minor proposition about actuality, and a more ampliated [term] does not entail a less ampliated one with distribution.

The reason for the fifth rule is that a minor about actuality entails a particular about possibility, and then both premises are about possibility, entailing a conclusion about possibility.

Similarly, the reason for the sixth rule, as regards its first part, is that an affirmative proposition about actuality entails a particular affirmative about possibility, and then both premises will be about possibility, whence is constituted a valid syllogism. But the reason that the syllogism is not valid, if the premise about possibility is particular, is that from the one about actuality, however universal it may be, only a particular about possibility follows. Therefore, both premises would be particular, and in this way the syllogism would not be valid; for example, 'Something running can be a donkey, and everything running is a horse', which does not imply that a horse can be a donkey.[43]

The seventh rule states first that *Felapton* and *Ferison* are valid if the major

42. This is one of the clearest examples of why we have to distinguish between a necessary proposition and a proposition about necessity. For of course we may have an assertoric proposition (i.e., one that does not contain any modality) that is necessary, e.g., 'Every man is an animal'; and we can also have a proposition about necessity (i.e., a modal proposition involving the modality of necessity) that is not only not necessary but even false, such as 'Every man is necessarily a donkey'. See the introduction.

43. Let us not forget that because of the ampliative force of the modal operator, the major is equivalent to 'Something that is or can be running can be a donkey', which can be true even if actually everything that is running is a horse, and of course no horse can be a donkey.

is about possibility, and the reason is that the minor about actuality entails the minor about possibility, and thus both [premises] will be about possibility. Then the seventh rule states that *Felapton* and *Ferison* are not valid if the major is about actuality, for there is a counterinstance, as follows: 'Nothing creating is God; everything creating can be the First Cause; therefore, the First Cause can not-be God'.

Finally it is said that *Bocardo* is not valid, for if the major is about actuality, the counterinstance would be the same as before, and if it is about possibility, then the minor about possibility entails only a particular about possibility, and thus both [premises] would be particular.

5.7.3 Mixing the assertoric with the necessary premises

> If one of the premises is about actuality and the other is about necessity, then the following rules are given. (1) The first is that when the major is about necessity then all modes of the first figure validly entail a particular conclusion about necessity, but not a universal one, except with the addition of 'that is'. (2) The second rule is that if the major is about actuality, then the syllogisms of the first figure do not validly entail a conclusion about necessity or about actuality; they are valid, however, for the inference of a conclusion about possibility. (3) The third rule is that in the second figure *Cesare, Camestres,* and *Festino* are valid in the same way as are *Celarent* and *Ferio* in the first figure. (4) The fourth rule is that if the major is about necessity in *Baroco,* then it is valid to infer a conclusion about actuality, but not one about necessity; and if the major is about actuality, then it is valid only to infer a conclusion about possibility. (5) The fifth rule is that in the third figure, if the major is about necessity, then *Darapti, Felapton, Datisi,* and *Ferison* validly entail a conclusion about necessity, but *Disamis* and *Bocardo* do not validly entail any conclusion. (6) The sixth rule is that if the major is about actuality in the third figure, then *Darapti* and *Disamis* validly entail a conclusion about actuality, and the other modes do not validly entail anything.

The third part contains two rules concerning the first figure, two concerning the second, and two concerning the third. The first rule is clear insofar as a particular conclusion about necessity follows; for if everything that is or can

be B is necessarily A, as is signified by the major, and some C is B, then it follows that that C is necessarily A, by *dici de omni;* and it holds in the same way with negative [propositions], and [the conclusion] follows by *dici de nullo.*

The reason that a universal conclusion about necessity does not follow is that the minor extremity in the minor about actuality stands only for things that actually exist, whereas in the conclusion about necessity it would stand for both things that exist and those that can exist; therefore, this would involve moving from a less ampliated distributed term to a more ampliated one, which is invalid. A universal conclusion validly follows, however, if the minor extremity in the conclusion is restricted by [the phrase] 'that is', so that it would not stand more ampliated in the conclusion than it did in the premise. But that a universal conclusion about necessity does not follow in *Barbara* or in *Celarent* is obvious by a counterinstance. For everything creating is necessarily God and everything thinking is creating (for let us assume that at the present moment only God is thinking and he creates Socrates), yet, because of the ampliation of the subject the conclusion is false that states that everything thinking is necessarily God; but it could be validly inferred that 'therefore, everything that is thinking is necessarily God'.

Again, we should note that in the first figure, if the major is about necessity, then it is not only a conclusion about necessity that is inferred, but also one about actuality. For although a proposition about necessity does not necessarily entail an affirmative one about actuality, a particular one about necessity does validly entail a particular one about actuality, provided that [the subject of] the one about necessity supposits for something that actually exists; and this is assumed with respect to the subject of the conclusion in the minor proposition, which is about actuality; therefore, that necessary conclusion does entail a conclusion about actuality.

The second rule is clear as to its first part on the basis of a counterinstance, assuming that God creates Plato, but He does not create Socrates, whom, nevertheless, He can create. Then the following is true: 'Every God is creating', and so is 'Everything creating Socrates is necessarily God', for everything that is or can be creating Socrates is necessarily God, yet, the conclusion is false, whether actually or necessarily (for it is false that [something] creating Socrates is creating, since we assumed that nothing is creating Socrates). Similarly, there is a counterinstance with negative propositions. For let us assume that no moon is lacking light and that every heavenly body lacking light is necessarily the moon; still, the conclusion that says that a heavenly body lacking light is not lacking light would be false.[44] The conclusions about possibility,

44. Unless the text is corrupt in this passage, Buridan may have overlooked something here. For the premises 'No moon is [a heavenly body] lacking light' and 'Every heavenly

however, would be true, namely, '[Something] creating Socrates can be creating' and even 'A heavenly body lacking light can not-be lacking light'.

The third rule is obvious. For we said earlier that universal negatives about necessity are converted simply, just as are universal negatives about actuality. Therefore, it is by means of such conversions that reduction to the first figure is carried out, and by means of the transposition of premises as far as *Camestres* is concerned.

The fourth rule is to be clarified first with respect to the claim that *Baroco* does not permit the inference of a conclusion about necessity, even when the major is about necessity. For there is the following counterinstance: 'Every first being is necessarily God, and something creating is not God' (assuming that God is creating nothing at the moment), yet, the conclusion is false that says 'Something creating is necessarily not a first being'. But that it would be valid to draw a negative conclusion about actuality, namely, when the major is about necessity, is obvious, because from the contradictory of the conclusion with one of the premises one can infer the contradictory of the other premise. For example, let us take the following syllogism: 'Every B is necessarily A; some C is not A; therefore, some C is not B'; then, from the major and from the contradictory of the conclusion we can form the following syllogism: 'Every B is necessarily A, and every C is B', from which it follows in the first figure that 'therefore, everything that is C is A', from which it follows further that 'therefore, every C is A', which contradicts the minor.

And we should take good note concerning the mixtures dealt with in this whole chapter that it would [show] excessive curiosity and [be] excessively tedious to discuss the indirectly concluding modes in such mixtures, as well as the modes with negatives not formed in accordance with common usage, as for example, 'A man an animal is not', and the same applies to the ones with ampliative verbs or predicates. Therefore, in this chapter I declare without further ado that all the modes that cannot conclude directly and in accordance with the common usage of proposition-formation are not valid at all; and I am speaking as though there were no ampliation besides that resulting from the modes 'possible', 'necessary', and 'contingent', i.e., the ones being discussed here. It is on such grounds that I have assumed just now that 'Everything that is C is A; therefore, every C is A' is valid, although it is not valid if the predicate is ampliative.

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body lacking light is necessarily the moon' entail that nothing is [a heavenly body] lacking light; but then the negative conclusion 'A heavenly body lacking light is not [a heavenly body] lacking light' is true, because its subject term is empty, and thus the consequence is valid, despite Buridan's claim to the contrary. I owe thanks to my student Christopher Mirus for calling my attention to this problem.

It is also obvious by a counterinstance that *Baroco* is not valid for the inference of a conclusion about necessity or about actuality, if the major premise is about actuality. For let us assume that at the moment only intelligent substances exist, and all the others are annihilated, but others could be created as well, and tomorrow the souls of the planets will be created; then every substance is intelligent, and some substance is necessarily not intelligent, namely, a soul of a planet; yet, the conclusion, which says that some soul is not a substance, or that some soul is necessarily not a substance, is false.

The fifth rule is clear as to its first part, for all those modes are reduced to the first figure by conversion of the particular affirmative minor premise. But as to the second part, namely, that which says that *Disamis* and *Bocardo* do not validly conclude to anything (and I am talking about concluding directly) when the major is necessary, this is obvious by counterinstances. First, in *Disamis:* if some celestial body in Taurus is necessarily the sun, and every celestial body in Taurus is the moon (let us assume), then it is clear that every affirmative conclusion is false, be it about necessity, actuality, or possibility.[45] A similar counterinstance can be given in *Bocardo,* for even if some celestial body in Taurus is necessarily not the sun, and every celestial body in Taurus is the greatest of celestial bodies (let us assume), yet it is clear that every negative conclusion would be false.[46]

The sixth rule is made manifest by an expository syllogism with respect to its first part. For if some C is A and every C is necessarily B, then it follows that that C which is A is B; whence it follows that some B is A. The second part is clarified by counterinstances. First in *Datisi:* even if every celestial body in Taurus is the sun, and some celestial body in Taurus is necessarily the moon (let us assume), it is obvious that the affirmative conclusion would be false, whether about actuality, necessity, or possibility.[47] Similarly, there is a counterinstance against *Felapton,* positing that God does not create Socrates, whom, however, He can easily create; then, even if nothing creating Socrates is God and everything creating Socrates is necessarily the First Cause, it is obvious that the negative conclusion would be false whether about actuality, necessity, or possibility.[48] Furthermore, if *Felapton* is not valid, then it immedi-

45. It is false that some thing that is the moon is (necessarily, possibly) the sun. (Note that Latin lacks articles.)

46. It is false that some thing that is the greatest heavenly body is (necessarily, possibly) not the sun. At least, the conclusion about possibility is false according to what is necessary in Aristotelian physics.

47. The conclusion in question would be that some thing that is the moon is (necessarily, possibly) the sun.

48. The conclusion in question would be that some thing that is the First Cause is (necessarily, possibly) not God.

ately follows that *Bocardo* and *Ferison* are not valid either; for the premises of *Felapton* entail the premises of *Bocardo* and *Ferison,* and whatever does not follow from the antecedent does not follow from the consequent.

But where this mixture of [premises about] necessity and actuality is concerned we should note carefully that Aristotle analyzes it differently in the *Prior Analytics* and provides different rules. The rules that he provides in the first and the second figures are compatible with our rules but do not deal at all with necessary conclusions. But in the third figure Aristotle gives the rule that *Darapti* is valid with a conclusion about necessity if either of the premises is necessary. This is not true, however, with reference to a direct conclusion when the major is about actuality, unless it is taken to be about actuality absolutely, i.e., if it is supposed to be necessary; and we say that this is how Aristotle intended it. For example, the following is not valid: 'Every God is creating, and every God is necessarily the First Cause; therefore, the First Cause is necessarily creating'. Similarly, Aristotle states that *Disamis* validly allows the inference of a conclusion about necessity if the minor is about necessity, and this is not true, except under the same stipulations as those imposed on *Darapti.*

5.7.4 Mixing the assertoric with the contingent premises

If one of the premises is about actuality and the other is about contingency,[49] then we should posit a number of rules analogous to the ones that were given about the mixture of [premises] about actuality and possibility. (1) The first is that some syllogisms are not valid in the second figure. (2) The second rule is that a conclusion about actuality does not follow in any figure. (3) The third rule is that in the first figure the syllogisms are not valid if the major is about actuality. (4) The fourth rule is that in the first figure no universal conclusion can be inferred with the addition of [the phrase] 'that is'. (5) The fifth rule is that if the major in the first figure is about contingency, then there follows a particular conclusion about contingency. (6) The sixth rule is that in the third figure, if the major is about contingency, *Darapti, Felapton, Datisi,* and *Ferison* entail a conclusion about contingency, but *Disamis* and *Bocardo* entail noth-

49. *De contingenti ad utrumlibet,* literally, 'about what is contingent both ways', i.e., what may be so and may not-be so.

ing. (7) The seventh rule is that in the third figure, if the major is about actuality, then no modes entail a conclusion about contingency. (8) The eighth rule is that any syllogisms in the third figure that were valid with the major about actuality and the minor about possibility, whether for inferring a conclusion about actuality or one about possibility, are valid with the major about actuality and the minor about contingency for the inference of the same conclusions; and those that did not entail anything where the mixture of premises about actuality with premises about possibility was involved also entail nothing where the mixture of premises about actuality with premises about contingency is concerned.

The fourth part provides eight rules, five of which are expounded in a manner similar to that applicable to the first five provided to cover the mixture of premises about actuality and possibility, for they are entirely similar and analogous to the latter.

The sixth rule holds, because those four modes are clearly reduced to the first by the conversion of the minor. But what is said there, namely, that *Disamis* and *Bocardo* entail nothing when the major is about contingency, is obvious. For there is a counterinstance in *Disamis* as follows: 'Some heavenly body in Taurus contingently lacks light, and every heavenly body in Taurus is the sun'; it is clear that any affirmative conclusion would be false, whichever happened to be drawn.[50] A similar counterinstance can be given in *Bocardo:* for if some heavenly body in Taurus contingently is not shining [and every heavenly body in Taurus contingently is not shining][51] and every heavenly body in Taurus is the sun, then it is clear that a negative conclusion would be false, whichever were to be inferred.[52]

The seventh rule is clarified in the following manner. If *Darapti* and *Felapton* are not valid, then neither are the other modes, because the premises of the others follow from the premises of these. But in *Darapti* we give the following counterinstance: everything creating is God and everything creating is contingently creating substance, and yet, the conclusion would be false that would say that something creating substance is contingently God; on the contrary, everything creating substance is necessarily God. And a similar counterinstance can be given in *Felapton,* for nothing creating is God (let

50. That is, whether assertoric, possible, necessary, or contingent, namely, 'Some thing that is the sun (necessarily, contingently, possibly) lacks light', for the sun necessarily has light, according to Aristotelian physics.

51. This premise seems to be superfluous, but it is in the text. In any case, it is the previous, particular premise that is required by the form of *Bocardo.*

52. This would be a conclusion to the effect that some thing that is the sun is (possibly, necessarily, contingently) not shining.

us assume) and everything creating contingently creates substance; still, it is clear that the conclusion about contingency would be false.

The eighth rule is clear as to its first part. For a proposition about contingency entails a proposition about possibility; therefore, whatever follows from a proposition about possibility also follows from a proposition about contingency posited in place of that proposition about possibility. The second part can be shown to hold by means of counterinstances, which any who wish so to do should consider for themselves.

And we should note, in accordance with what was said earlier, that wherever we posit an affirmative about contingency, we can put in its place a negative one, and conversely, because of their convertibility into the opposite quality. Therefore, if the major is about contingency, then the same conclusions are entailed by *Barbara* and *Celarent,* and the same goes for the others each in their own way.

5.7.5 Mixing the possible with the necessary

> Furthermore, if one of the premises happens to be about possibility and the other about necessity, then the rules are to be given in a similar manner. (1) The first rule is that in the first figure, if the major is about necessity, then all modes are valid for the inference of a conclusion about necessity; but if the major is about possibility, then all modes are valid for the inference of a conclusion about possibility, but none are valid for the inference of one about necessity. (2) The second rule is that all modes of the second figure are valid for the inference of a conclusion about necessity, if either of the premises is about necessity. (3) The third rule is that the same holds entirely for the third figure as holds for the first.

The fifth part contains one rule for each figure. The first rule, as to its first part, holds by virtue of *dici de omni* and *dici de nullo,* which would be clear, given a sufficient explication of the propositions. But also the second part, namely, that if the major is about possibility, then a conclusion about possibility follows, is obvious by *dici de omni* and *dici de nullo.* And it is also clear by virtue of the fact that a proposition about necessity entails one about possibility; whence both [premises] would be about possibility, and we said elsewhere that in this way a conclusion about possibility is entailed.[53]

But that a conclusion about necessity does not follow is clear on the basis

53. See 5.6.4.

of counterinstances. First in *Barbara:* for every God is possibly creating, and everything creating a substance is necessarily God, still, the conclusion that everything creating a substance is necessarily creating would be false. Using the same terms, we can provide the following counterinstance to *Celarent:* every God is possibly not creating and everything creating a substance is necessarily God, but the conclusion would be false, namely, that everything creating a substance is necessarily not creating.

The second rule is to be shown to hold by means of the observation that 'necessarily is' and 'possibly is not' are incompatible, and so are 'necessarily is not' and 'possibly is'. Therefore, if 'necessarily is A' is predicated universally of some subject, and 'possibly is not A' is universally predicated of another subject, then it is impossible that those two subjects supposit for the same thing; therefore, one is truly negated universally of the other and with the mode of necessity. And the same will hold if 'necessarily is not A' is universally predicated of some subject, and 'is possibly A' is universally predicated of another. Therefore, in this way *Cesare* and *Camestres* are obviously valid for the inference of a conclusion about necessity, whichever of the premises was about necessity. In the particular modes, namely, in *Festino* and *Baroco,* the major extremities are distributed in the premises; therefore, they can also be inferred as being distributed about the minor extremities taken particularly in the conclusion with the mode 'necessarily'.

The third rule, with respect to the part stating that if the major is about necessity, then a conclusion about necessity follows, is clear in every mode by exposition. Again, that when the major is about possibility, then a conclusion about possibility follows is obvious: for [a proposition] about necessity entails one about possibility, and thus both [premises] would be about possibility. But that a conclusion about necessity does not follow is clear by a counterinstance. First in *Darapti:* for given that everything creating a substance is possibly creating, and everything creating a substance is necessarily God, it is nevertheless false that God is necessarily creating. Similarly in *Felapton:* for given that everything creating a substance is possibly not creating and everything creating a substance is necessarily God, it is nevertheless false that God is necessarily not creating.

We should note that in this mixture an affirmative conclusion about actuality never follows, because the premises were perhaps true only for things that can [only] possibly exist, whereas every true affirmative conclusion about actuality should be true about things that actually exist, if it is to be true [at all]. But in whichever [syllogistic] mode a universal negative conclusion about necessity is entailed, in the same mode there follows a universal negative conclusion about actuality, because a universal negative about necessity entails a universal negative about actuality.

5.7.6 Mixing the possible with the contingent premises

> With respect to the mixture of [premises] about possibility and contingency we give the following rules. (1) The first is that in whichever modes and figures a conclusion follows when both premises are about possibility, in those the same conclusion follows if one premise is about possibility and the other is about contingency. (2) The second rule is that in the first figure if the major is about contingency, then all modes are valid to infer a conclusion about contingency; but they are not, if the major is about possibility. (3) The third rule is that in the second figure no syllogism is valid. (4) The fourth rule is that exactly the same holds for the third figure as for the first.

The sixth part contains four rules. The reason for the first rule is that a premise about possibility follows from one about contingency, and whatever follows from the consequent follows from the antecedent.

The second rule clearly holds as to its first part by *dici de omni* concerning the affirmative modes, and, consequently, also concerning negative modes, since affirmative and negative propositions about contingency are equivalent. But the second part, namely, that no conclusion about contingency follows if the major is about possibility, is clear [from the following]. In *Barbara* we have the following counterinstance: 'Everything creating is possibly God, and every First Cause is contingently creating', still, the First Cause is not contingently but necessarily God. There is also a counterinstance in *Celarent:* for everything asleep is possibly not a stone, and every horse is contingently asleep, yet, it is false that every horse is contingently a stone, for then it would follow that it [a horse] could happen to be a stone.

The third rule is clear. For it was said elsewhere[54] that the second figure is invalid when both premises are about contingency; whence nothing is valid as far as propositions that follow from them are concerned, such as those about possibility.

The fourth rule, as to its first part, is shown to hold by exposition. But as to its second part[55] we can give the following counterinstance in *Darapti:* every First Cause can be God, and every First Cause is contingently creating, yet, the conclusion is false that states that something creating is contingently God; for everything creating is necessarily God. A further counterinstance is given in *Felapton:* every horse is possibly not a stone and every horse is contingently asleep, yet, the conclusion would be false that would say that some-

54. See 5.6.6.

55. That is, with respect to the corresponding parts of the second rule.

thing asleep is contingently not a stone; for then something asleep would contingently be a stone too.[56]

5.7.7 Mixing the necessary with the contingent premises

> We can also have some rules concerning mixtures with [premises] about necessity and contingency. (1) The first is that in the first figure, if the major is about necessity, then all modes are valid for the inference of a conclusion about necessity, and if the major is about contingency, then all modes are valid for the inference of a conclusion about contingency. (2) The second rule is that in the second figure, if the major is about necessity, then all modes are valid for the inference of a conclusion about necessity, and none for the inference of one about contingency; and the same holds if the minor is about necessity. (3) The third rule is that with the third figure the case is entirely the same as with the first.

The seventh part contains three rules, the first of which is obvious by virtue of *dici de omni* and *dici de nullo.* And the second rule is obvious: for in the second figure a conclusion about necessity followed from a premise about necessity and another about possibility; therefore, the same follows from a premise about necessity and another about contingency, for the premise about possibility follows from the one about contingency. The third rule can be shown to hold by exposition.

This much will suffice about mixtures. And whoever wishes to stretch the subtlety of his ingenuity with further rigor in pursuit of what has been said, will be able to find sufficient direction here.

56. What is contingently not a stone both can be and can not-be a stone (which is why the affirmative and the negative about contingency are equivalent), but nothing asleep can be a stone, for only living things can be asleep.

5.8 Chapter 8: On syllogisms with oblique terms and on reduplicative syllogisms

*5.8.1 The verb 'belongs' [*inest*] as a copula*

> We construct syllogisms with oblique terms in several ways. The first of these is when we use the verb 'belongs' [*inest*] in a categorical proposition in the capacity of the copula, in place of the verb 'is'. For then a proposition with a subject in the nominative case and the copula 'is' is equivalent to a proposition with a subject in the dative case and with the copula 'belongs' so that the following are equivalent: 'Animal belongs to every man' and 'Every man is an animal'; as also are the following: 'Stone belongs to no man' and 'No man is a stone'. And thus it is obvious that in whichever figures and modes one can syllogize with terms in the nominative case and the copula 'is', in the same figures and modes one can also do so with oblique terms and the copula 'belongs'.

In the eighth chapter syllogisms with oblique terms as well as reduplicative syllogisms will be discussed. It will contain five parts: the first will concern the way we use the verb 'belongs' as a copula, in place of the verb 'is'; the second will be about syllogisms with oblique terms that are similar to the first figure containing terms in the nominative case; the third will be about those that are similar to the second figure; the fourth will be about those that are similar to the third figure; and the fifth will be about reduplicative syllogisms.

As to the first part, we should note that Aristotle almost throughout the whole of the *Posterior Analytics* uses the first way of syllogizing, which involves oblique terms. But we should also note that 'belongs' is also used in many other ways, namely, as [when we say that] form belongs to [*inest*—'is in'] matter, or an accident belongs to a subject, or a part belongs to a whole, a thing placed somewhere belongs to a place; but these ways are not relevant to the formal modes of syllogisms. Therefore, in syllogizing we have to be wary of the equivocation of the verb 'belong'; for if we say that 'Whiteness belongs to this milk, and sweetness belongs to the same milk', it does not follow that therefore 'whiteness belongs to sweetness', for 'belonging' [*inesse,* being in] is taken here in the sense of the real inherence of an accident in the substance as its subject, but it does follow that since whiteness belongs to this milk (i.e., this milk is white), and sweetness belongs to the same milk (i.e., the same milk

is sweet), therefore, white belongs to sweet (i.e., a sweet thing is white); and this is an expository syllogism.

5.8.2 Syllogisms with oblique terms that are similar to the first figure

There is another way of syllogizing with oblique terms, for whenever in the major proposition some oblique term is distributed, whether affirmatively or negatively, then of whatever term the nominative form of the oblique term is affirmed in the minor, in the conclusion there will be attributed to the oblique form of that term whatever was attributed to the original oblique term in the major.[57] For example, 'Every man's donkey is running [of every man a donkey is running]; every king is a man; therefore, every king's donkey is running [of every king a donkey is running]; similarly, 'No man a donkey sees [no man is seen by a donkey]; every king is a man; therefore, no king a donkey sees [no king is seen by a donkey]'. And this mode of syllogizing is similar to the first figure with nominative terms, for it holds directly on account of the subsumption under a distributed term.

Some say that this mode of syllogizing is truly in the first figure according to the description of the first figure given at the beginning, namely, that the first figure is the one in which the middle term is subjected in the major and is predicated in the minor. For when I say 'Every man's donkey is running [of every man a donkey is running]', the term 'man's' is the middle term, and is the subject in the minor, although here in its oblique form, and it is the predicate in the minor, but now in its nominative form. But we have said elsewhere that in the aforesaid major premise 'man's' is not the subject.[58]

57. Or, more simply, if the oblique term of the major is distributed, then it can be replaced in the conclusion by the oblique form of the subject of the minor, when the predicate in the minor is the nominative form of the distributed oblique term of the major. This rule in modern "natural logic" is often referred to as the rule of "upward monotonicity." See V. Sánchez, *Studies on Natural Logic and Categorical Grammar* (Amsterdam: University of Amsterdam Press, 1991); J. van Benthem and A. ter Meulen, eds., *Generalized Quantifiers in Natural Language* (Dordrecht: Foris, 1985). As can be seen, this rule provides an example of how supposition theory can serve to overcome the limitations of "pure syllogistic," which would leave the intrinsic structure of complex terms unanalyzed.

58. See 4.2.6.

Therefore we should realize that in syllogisms with oblique or with complex terms, it is not necessary that the syllogistic terms, namely, the middle term and the extremities, be the same as the terms of the premises and the conclusion, namely, their subjects and predicates. This is because it is permitted to carry out a subsumption under a distributed term not only if it is placed at the beginning of a proposition, but wherever it is placed. For example, the following is valid: '[Some] B is every A and [some] C is [an] A; therefore, [some] B is [a] C'. This is a perfect syllogism, just as one in the first figure, for it holds directly on account of subsumption under a distributed term. In the same way, the following is a valid, and perfect, syllogism: 'A donkey sees every man; every king is a man; therefore, a donkey sees every king'. And the syllogistic middle term here is 'man', taken in the major in an oblique case and in the minor in the nominative case, which, however, is neither the subject nor the predicate of the major. The minor extremity is 'king', whereas the major extremity is the remainder, namely, the aggregate of 'donkey' and 'sees', and this aggregate is attributed to the oblique case of 'king' in the same way in the conclusion as it was attributed to the oblique case of 'man' in the major.[59]

The following would also be a valid syllogism: 'A man sees a non-animal and every horse is an animal; therefore, a man sees a non-horse'. One must be cautious, however, lest something be distributed in the conclusion that was not distributed in the premises. Whence the following consequence is not valid: 'A man sees a non-animal, and a being is an animal; therefore, a man sees a non-being', for 'being' was not distributed in the premises, but it is distributed in the conclusion. One should conclude: 'therefore, a being a man does not see', or one should conclude with a relative pronoun of identity thus: 'therefore, a man does not see that being'. In the same way, if we say 'A man sees no horse and an animal is a horse', one must not conclude 'therefore, a man sees no animal' but rather 'therefore, an animal a man does not see'.

One can also construct a syllogism by subsumption in the minor under a double distribution in the major, as in the following: 'Every man sees every man; a king is a man; therefore a king sees a king'. And all the aforementioned modes of syllogizing are perfect, and are similar to the first figure, as is obvious.

59. Accordingly, the syllogistic terms of this syllogism can be marked out in the following manner: {major}; [middle]; (minor); 'A {donkey sees} every [man]; every (king) is a [man]; therefore, a {donkey sees} every (king)'. By contrast, the terms of the propositions of the same syllogism can be marked out as follows: {subject}; [copula]; (predicate); 'A {donkey} [is] (seeing every man); every {king} [is] a (man); therefore, a {donkey} [is] (seeing every king)'.

5.8.3 Syllogisms with oblique terms that are similar to the second figure

Another mode of syllogizing with oblique terms, similar to that found in the second figure, occurs when the same syllogistic middle, whether it is one term or several terms, is attributed in the premises to two oblique terms, to one affirmatively, and to the other negatively, as to two extremities. If the major extremity was distributed, then in the conclusion the major extremity will be attributed to the minor negatively in the nominative case, and the conclusion will be universal if the minor extremity was distributed in the premises, just as was the major, whereas the conclusion will be particular if the minor premise was not distributed in the premises. For example, 'Every B an A sees ['Every B is seen by an A'], and no C an A sees ['No C is seen by an A']; therefore, no C is a B'; similarly, 'No horse a man sees ['No horse is seen by a man'] and every donkey a man sees ['Every donkey is seen by a man'], therefore, no donkey is a horse'; and if you take 'C' or 'donkey' as undistributed, then a particular conclusion will have to be inferred.

This mode of syllogizing is proved by *reductio ad impossibile.* For from the major and the contradictory of the conclusion one infers the contradictory of the minor when one utilizes the previous mode of syllogizing, which we have said to be perfect and to be similar to that found in the first figure; and whoever wishes to carry out the *reductio* should do so.[60]

But, just as was said earlier, we should take care that nothing happens to be distributed in the conclusion that was not distributed in the premises. For example, if we were to argue thus: 'No man's horse is running, and of any man an animal is running', it does not follow that 'therefore, of no man an animal is a man's horse', for 'animal' is distributed in the conclusion, but it was not distributed in the premises; however, it validly follows that 'therefore, of any man an animal is not a man's horse'.[61] And it is clear that in this syllo-

60. So, let us do it. The contradictory of the conclusion is 'Some donkey is a horse'. We have to show that this, along with the major, 'No horse a man sees' ('No horse is seen by a man'), implies the contradictory of the minor: 'Some donkey a man does not see' ('Some donkey is not seen by a man'). If some donkey is a horse, then let us take such a donkey. Since this donkey is a horse, and, by virtue of the major, no horse is seen by a man, this donkey is not seen by a man. Therefore, some donkey is not seen by a man, q.e.d.

61. This can be clarified in the following manner. Because of the first premise it holds that no man has a horse that is running. Because of the second it also holds that any man has some animal that is running. Therefore, obviously, any man has an animal that is running

gism the middle term is 'running', the major extremity is 'man's horse', and the minor extremity is 'animal of a man', whatever may happen to be posited as the subject or the predicate in the propositions.

5.8.4 Syllogisms with oblique terms that are similar to the third figure

> Furthermore, another mode could be posited, similar to that which is found in the third figure. For if the major extremity were attributed to an oblique middle term, whether affirmatively or negatively, and the minor extremity were attributed affirmatively to the same middle term taken in the nominative case, then the major extremity would be concluded about the minor taken in an oblique case, provided at least that the middle term in one of the premises were distributed. For example, 'Whichever man's donkey is running; every man is an animal; therefore, an animal's donkey is running'. In a similar manner, negatively: 'No man's donkey is running; a man is an animal; therefore, some animal's donkey is not running', or thus: 'some man's donkey is not running; every man is an animal; therefore, some animal's donkey is not running'.

This mode of syllogizing is proved *per impossibile,* just as was the previous one. For from the contradictory of the conclusion and the minor we infer the contradictory of the major by means of the syllogisms mentioned above, which are similar to those of the first figure, and which we said to be perfect. For example, using the former example, the contradictory of the conclusion is 'No animal's donkey is running', and the minor is 'A man is an animal', and from these we can infer 'therefore, some man's no donkey is running', which contradicts the major. And as far as the other syllogisms are concerned, whoever wishes to do so should construct their reductions.

There are also other modes of syllogizing with oblique terms, [namely, modes] that do not consist of two categorical premises and a categorical conclusion but have a hypothetical premise or a hypothetical conclusion, using relative pronouns, such as 'that', 'such', 'that much', and the like. For example, 'Any man's donkey is running and any man's horse is running; therefore, [he]

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but that is not a horse, so, any man has an animal other than a horse. Equally obviously, however, it does not follow that no man has a horse.

whose horse is running [is such that] his donkey is running'; or in this way: 'Whatever you see, that is white; [it is] a stone [that] you see; therefore, a stone is white'; or thus: 'Of whatever quality the thing that Socrates bought was, such was the thing he ate; it was a raw thing that Socrates bought; therefore, it was a raw thing that Socrates ate'.[62] And even if other modes of syllogizing with oblique terms could be found, these are nevertheless the principal and more customary ones.

5.8.5 About reduplicative syllogisms

(1) Concerning reduplicative syllogisms, which conclude to a reduplicative conclusion, we should note that they are most appropriately and clearly formed in the first figure, and in all four modes of it, appending the reduplication neither to the minor extremity nor to the middle term but to the major extremity, both in the premises and in the conclusion. (2) Similarly, a reduplicative conclusion is inferred in all modes of the third figure if the reduplication was added to the major extremity in the major proposition. (3) But in the second figure there is no place, strictly speaking, for syllogisms inferring a reduplicative conclusion.

The final part of this chapter, which is about reduplicative syllogisms, contains three rules. And the first rule obviously holds on the basis of *dici de omni* or *de nullo.* Syllogisms are formed in the following manner, first, in *Barbara:* 'Every triangle has three angles equal to two right angles, insofar as it is a triangle; every isosceles is a triangle; therefore, every isosceles has three angles equal to two right angles, insofar as it is a triangle'. Here 'triangle' is the middle term, 'isosceles' is the minor extremity, and the major extremity is '[thing] having three angles equal to two right angles, insofar as it is a triangle'. One would argue in a similar manner as follows: 'Every animal is a living thing, insofar as it is an animate thing, and every man is an animal; therefore, every man is a living thing, insofar as he is an animate thing'.

In *Celarent* one would argue as follows: 'No animal is sensitive, insofar as it is an animate thing; every man is an animal; therefore, no man is sensitive, insofar as he is an animate thing'. In *Darii* and in *Ferio* syllogisms would be formed in the same way, except that the minors and the conclusions would be particulars.

62. See 7.3.10; *Sophismata,* chap. 4, Second sophism.

But you might ask: "Why shouldn't the reduplication be attached to the middle term as its part, just as it is attached to the major extremity?." And I reply that this is so because the middle term is not placed in the conclusion; therefore, one could never conclude to a reduplicative conclusion on account of a reduplication in the middle term.

But then another question immediately arises: "Why is not the reduplication placed in the minor term, as it is in the major?" I reply that the function of reduplication is to designate the convertibility of the reduplicated term with the predicate of the simple proposition, and not with the subject. For example, the following is true: 'A man is sensitive, insofar as he is an animal', for 'animal' and 'sensitive', which apply to 'man', are convertible with each other, whereas this is false: 'A man is risible, insofar as he is an animal', for 'animal' and 'risible' are not convertible, although 'man' and 'risible' are. And it is for this reason that the reduplication has to be attached to the predicate, the convertibility with which it does indicate, and not to the subject, the convertibility with which it does not indicate. Therefore, if we say: 'A man, insofar as he is a man, is risible', the sense of the proposition, if it is taken in the proper sense, is that 'man' is understood to be the subject, and the rest is the predicate, namely, 'insofar as he is a man, is risible', which amounts to saying: 'is risible, insofar as he is a man'. Therefore, since the minor extremity is always the subject in the first figure, the reduplication should not be added to it.

The second rule, which concerns the third figure, can be manifested by exposition in all modes. Also, as to *Darapti, Felapton, Datisi,* and *Ferison,* it is manifested by reducing these modes to the first mode by converting their minor propositions. But all these modes can also be proved *per impossibile,* for from the contradictory of the conclusion and the minor one can infer the contradictory of the major by means of the first figure; and whoever so desires may form these syllogisms.

The third rule, which is in the second figure, is obvious from what has been said. For we have said that reduplication should not be added to the middle term; but neither is it to be added to either extremity in the premises, for both occur as subject-terms, and we have also said that the reduplication should not be added to the subject.

5.9 Chapter 9: About syllogisms with infinite terms

5.9.1 A division of syllogisms using infinite terms

(1) One can syllogize in two ways using infinite terms or a mixture of finite and infinite terms. In one way every finite term in one proposition remains finite in any other, and every infinite term in one proposition is also infinite in any other. In the other way a term taken finitely in one proposition is taken infinitely in another, or conversely. (2) And if one syllogizes in the first way, then one has to syllogize in all figures and modes in the same way as if one were syllogizing only with finite terms. (3) If, however, one syllogizes in the second way, we have to consider now the modes in which this should be carried out.

The ninth chapter considers syllogisms in which there are some infinite terms. It contains three parts. The first prefixes a division, expounding the first member and propounding to consider the second; the second and the third parts provide two rules.

The first part contains three sections, the first of which presents the division, which is clear enough, and if it needs further clarification, this will be provided in dealing with its members.

The second section is clear. For in *Barbara* we might syllogize having all terms infinite in the following way: 'Every non-B is a non-A and every non-C is a non-B; therefore, every non-C is a non-A', and this syllogism holds directly by virtue of *dici de omni.* The same goes for the other modes of the first figure, each in their own way, and also for the other figures. Reduction to the first figure can also be carried out as if the terms were finite.

Similarly, if there were a mixture of finite and infinite terms, we should syllogize in the same way; for example: 'Every B is a non-A; every C is a B; therefore, every C is a non-A'; or thus: 'Every non-B is an A; every C is a non-B; therefore, every C is an A'; or thus: 'Every B is an A; every non-C is a B; therefore, every non-C is an A'; or even thus: 'Every non-B is a non-A; every C is a non-B; therefore, every C is a non-A'. And so on in the same way, as is appropriate for each, with the other modes and figures.

The third section will be illustrated in the subsequent parts.

5.9.2 A rule

(1) We should note, therefore, that in every figure, from two universal negative premises there follows a universal negative conclusion, if the middle term is varied with respect to finitude and infinitude. (2) Then, in the first and in the second figures, from a universal negative major and particular negative minor there follows a particular negative conclusion, if the middle term is varied with respect to finitude and infinitude. (3) But in the third figure, if the middle term is varied in this manner, nothing follows when one of the premises is particular.

This part or this rule clearly contains three sections. And the first of them is illustrated first in the first figure by forming the following syllogism: 'No B is an A; no C is a non-B; therefore, no C is an A'. Now either there is some C or there is no C. If there is no C, then the conclusion is true that says that no C is an A; but if some C were to exist, then the minor 'No C is a non-B' entails that every C is a B, and then we can form the following syllogism: 'No B is an A; every C is a B; therefore, no C is an A', and this is an obvious syllogism in *Celarent;* therefore, the same conclusion that followed from the previous premises follows from these, for whatever follows from the consequent follows from the antecedent. The same would hold if we were to syllogize as follows: 'No non-B is an A; no C is a B; therefore, no C is an A'; for if 'C' supposits for nothing, then the conclusion is true, whereas if it is taken to supposit for something, then it follows that since no C is a B, therefore, every C is a non-B, and thus we get again a manifest syllogism in *Celarent*.[63] And the same would be the case if we syllogized in the following way: 'No non-B is an A; no non-C is a B; therefore, no non-C is an A'. And this would be proved as [the others] before: for 'non-C' either supposits for something or for nothing . . . etc.

And we often use this mode of syllogizing, although we do not recognize it, as when we say: 'Whatever is not an animal is not a man, and whatever is not a substance is not an animal; therefore, whatever is not a substance is not a man'. For to say that whatever is not an animal is not a man amounts to the same as saying that no non-animal is a man, and the same goes for the minor and the conclusion.

But again the same first section is illustrated by the second figure, for by the conversion of the major we would get the first figure. And the same is clear also in the third figure, for by the conversion of the minor we would get the first figure. And this is obvious to anyone who carries out the reductions.

But then some questions arise, namely, whether the aforementioned con-

63. That would be the syllogism 'No non-B is an A; every C is a non-B; therefore, no C is an A'.

sequences should be said to be formally valid, whether they consist of three terms or four, and whether they are to be called syllogisms or not.

To the first query I reply that just as syllogisms with finite terms can only be invalidated by ampliation, as may be seen elsewhere,[64] so could ampliation here invalidate the consequence. But, just as we said in the chapter on mixtures, so we state in this chapter that we do not intend to go into such scrupulous details, but we wish to talk only about syllogisms without ampliative terms; indeed, in this chapter we only intend to deal with direct conclusions and with the customary way of forming negative propositions.

Now the first query concerns whether the aforementioned consequences are formally valid in the sense that they are valid in every matter in which there is no ampliation, while keeping the same form. And I reply that if you wish to call the matter of these syllogisms only the subjects and predicates of their propositions, and [you were to take] the rest in the same order to belong to the form, then it is obvious that the previous syllogisms would not be formally valid. For then taking all subjects and predicates as finite, or all of them as infinite, or some of them as finite and some of them as infinite, would change only the matter, and yet the aforementioned consequences would not be valid. For example, in the reasoning 'No non-animal is a man; no non-substance is an animal; therefore, no non-substance is a man', there are four diverse subjects and predicates, namely, 'non-animal', 'non-substance', 'animal', and 'man'; and it is clear that we would have the same number of subjects and predicates in the same order in the following reasoning: 'No animal is a stone; no donkey is a man; therefore, no donkey is an animal', and thus only the matter is changed here, and yet the consequence is not valid at all.

But I say that if we call the matter of syllogisms of this kind only the finite categorematic terms, so that we would take the infinitizing negations with the remainder in the same order to belong to the form of such syllogisms, then syllogisms or consequences of this kind should be said to be formally valid, for they would hold in the same way in every matter when the same syllogistic form is preserved. In this way, then, they can be called formally valid consequences, for if we retained numerically the same purely syncategorematic terms, and added similar categorematic[65] terms in a similar order, these consequences would likewise be valid, however much we would change the purely categorematic terms.

But when it is asked whether the aforementioned consequences contain three terms or four, I will reply in a similar manner that if you wish to call the

64. See 5.6.3.

65. 'Categorematic' and 'syncategorematic' are in the reverse order in the Latin text, but that is certainly a scribal error.

'terms' of these syllogisms the subjects and predicates of their propositions, then it is clear that there are four diverse terms. But if by 'terms' you wish to understand only the purely categorematic terms, then there are only three, namely, the major extremity, the minor extremity, and the middle, which in one of the premises is taken with, and in the other without, an infinitizing negation.

And in this way one may also reply to the third query, namely, that the said consequences consist of three terms and two premises with one conclusion.

Hence I turn to the second section of this second part. And I say, as to the first figure, that the following is a valid syllogism: 'No non-B is an A; some C is not a B; therefore some C is not an A'. For, just as earlier, either there is a C or there is no C; if there is no C, then the conclusion is true that says: 'Some C is not an A'; and if there is some C, then it follows that if some C is not a B, then that C is a non-B, and thus there will be a syllogism that is manifest in the first figure, in the following way: 'No non-B is an A; some C is a non-B; therefore, some C is not an A'. But then the aforementioned second section clearly holds with respect to the second figure, for by the conversion of the major it is transformed into the first figure.

The third section is shown to hold by counterinstances. First, if the major is particular, then something animated is not an animal and nothing non-animated is a horse, yet, it does not follow that, therefore, some horse is not an animal; there is a similar counterinstance if the minor is particular, for then no stone is an animal and some non-stone is not a horse, but it does not follow that, therefore, some horse is not an animal.

5.9.3 Another rule

> (1) Further, we should also note that if both premises are affirmative in the first figure, they entail nothing when the middle term is varied with respect to finitude and infinitude. (2) But in the second figure, if both premises are affirmative, they do entail a negative conclusion when the middle term is varied with respect to finitude and infinitude, provided the major is universal.

It is clear that this part, or this rule, contains two sections. And the first is shown to hold by counterinstances. First in the first figure: for every man is an animal and every donkey is a non-man, but it does not follow that, therefore, every donkey is not an animal. And if you were to say that an affirmative con-

clusion should be entailed, I would give the following counterinstance: every man is an animal and every stone is a non-man, but it does not follow that a stone is an animal.

There is a similar counterinstance in the third figure: every creature is a being, and every non-creature is God, yet it does not follow that God is not a being.[66] And if you were to say that an affirmative conclusion should be inferred, I would provide the following counterinstance: every God is a First Cause and every non-God is a creature, but it does not follow that, therefore, a creature is a first cause.

The second section is justified by proving that the following is a valid syllogism: 'Every B is an A; every C is a non-A; therefore, no C is a B'; for the major 'Every B is an A' entails that no B is a non-A, and then it will be an obvious syllogism in *Cesare,* which would be reduced to *Celarent* by the conversion of the major. And in the same way, if the minor is particular, then this could be reduced to an obvious syllogism in *Festino,* and that in turn to one in *Ferio.*

5.10 Chapter 10: On the powers of syllogisms

5.10.1 The aim of this chapter

Now it remains to discuss the powers of syllogisms [*potestates syllogismorum*] of which Aristotle, in book 2 of the *Prior Analytics,*[67] posited six, and which are commonly brought under the following headings. The first is 'the syllogism able to conclude to several conclusions', the second is 'the syllogism concluding to truth from falsehoods', the third is 'the circular syllogism', the fourth is 'the conversive syllogism', the fifth is 'the syllogism by impossibility [*per impossibile*]' or '[leading] to impossibility' [*ad impossibile*], and the sixth is 'the syllogism from opposites'. We intend to cover these powers briefly, so we shall merely clarify their descriptions and some of their uses.

66. Here in the Hubien text we have *Deus est non ens* (God is a non-being), i.e., an affirmative conclusion with an infinite predicate, but in view of the next sentence I changed it to the negative conclusion: *Deus non est ens.*

67. Aristotle, *Prior Analytics* II.2.53b26ff.

The last part of this treatise will be about the powers of syllogisms. It will contain seven parts: the first propounds the aim of this chapter and names the six powers of syllogisms, as they are commonly called, and as it is licit to call them, given that names signify by convention [*ad placitum*]. This part also describes the mode of discussing them, and the other six parts discuss in particular each one of the aforementioned six powers.

The first part is clear. For, since Aristotle, in bk. 2 of the *Prior Analytics,* amply discussed these powers, it remains for us only to recapitulate them in a summary fashion and to refer [the reader] to Aristotle for a more detailed discussion.

5.10.2 The syllogism concluding to several conclusions

> The power called 'the syllogism concluding to several conclusions' is a syllogism's ability to conclude to several conclusions. And its use is that it enables one to know many conclusions without a multitude of syllogisms.

We should note that here by 'syllogism' we do not mean the aggregate of premises and conclusion. For if the conclusion were to be taken to be an integral part of the syllogism, then obviously by diversifying the conclusions one would diversify the syllogisms. But by 'syllogism' we mean sufficient premises sufficiently arranged for inferring some conclusion. And one should not discuss whether this is a proper locution in accordance with the primary imposition of the name 'syllogism', for names signify by convention. Therefore, in an equivocal fashion sometimes we take 'syllogism' in this way and sometimes for the whole aggregate of premises and conclusion.

The sense of the exposition of this power, therefore, is that from the same premises several, indeed, many conclusions can be inferred. And this is true for many reasons. The first is that whatever follows from the consequent follows from the antecedent. If, therefore, a conclusion seems to be able to be inferred from certain premises, we should see what else follows from that conclusion, whether by subalternation, by conversion, by equivalence, or in any other way; and then that [conclusion] can also be inferred from the same premises. For example, the premises 'Every B is an A' and 'Every C is a B' entail the conclusion 'Every C is an A', and this conclusion entails many others, for example, 'Some C is an A', by subalternation, 'Some A is a C', by conver-

sion, and 'No C is not an A', by equivalence; indeed, it also follows in another way that every C is (provided 'A' is not an ampliative term), and in yet another way that no C is a non-A; therefore, any of these is validly entailed by the aforementioned premises. But perhaps the difference here is that the consequence is evident when it leads to some conclusion but not when it leads to others, and then the consequence leading to the other conclusions is indeed to be proved by showing that they follow from the conclusion that was evidently entailed.

From this we can infer the corollary that some people are wrong in their opinion that no proposition with the verb 'is' as its absolute predicate [*'est' secundo adiacens*] can be demonstrated. And so they say that Aristotle could not demonstrate that there is an immaterial substance, but he could demonstrate that some substance is immaterial. But this is false. For I here make the assumption that both of these propositions are doubtful to Socrates, and that the second, as they say, can be demonstrated to him by premises that are manifest to him, and from which it manifestly follows; but then it is obvious that the same premises will also suffice to demonstrate to him the first proposition, namely, that some immaterial substance is, for, since the premises are known to him, only the consequence, which is necessary, will need to be declared to him; and then he would be compelled to concede and assent to the conclusion that was doubtful to him before, and this simply amounts to that conclusion's being demonstrated to him, and to his getting to know it; therefore, once this consequence is declared in this manner, this syllogism will make known that previously dubious conclusion, and a syllogism making something known is a demonstration.

Another way in which several conclusions follow from the same premises is when none of these conclusions follows from another one. For example, the premises 'Every B is an A' and 'Every C is a B' entail the conclusion 'Every C is an A' but also the conclusion 'Every C that is a B is an A', but neither of these follows from the other.[68]

Another way is posited by Aristotle that, however, does not appear to me

68. To be sure, it might seem that 'Every C is an A' should entail 'Every C that is a B is an A', but, as Buridan often reminds us, on his analysis this entailment is not valid with ampliative terms. For example, even if it is true that every donkey is an animal, it is false that every donkey that is dead is an animal, for the latter is an affirmative categorical whose subject term supposits for nothing. This is so because nothing is a donkey that is dead, since everything that is a donkey is alive (although, of course, some things that were donkeys are no longer alive). Indeed, the addition of 'that is a B' might entirely remove the supposition of A, in which case the antecedent might be true but the consequent false: e.g., 'Every donkey is an animal' does not entail 'Every donkey that is a horse is an animal.'

directly relevant here, namely, that if the major extremity is universally predicated of the middle term, and the middle term is universally predicated of the minor extremity, then just as the major extremity can be inferred [as predicated] of the minor extremity, so can it be inferred [as predicated] about everything else that is subsumed under the middle term or under the minor extremity. Now this is true, but it seems to me that these diverse conclusions are not inferred formally from the same premises. For example, let the first syllogism be the following: 'Every B is an A; every C is a B; therefore, every C is an A'; the conclusion 'Every C is an A' is inferred from the premises 'Every B is an A' and 'Every C is a B'; but if you subsume D under the middle term B, and you conclude that every D is an A, it is obvious that the premise 'Every C is a B' has nothing to do with inferring this conclusion, for this conclusion follows from the premises 'Every B is an A' and 'Every D is a B'; similarly, if E is subsumed under C, and it is inferred that every E is an A, this is not inferred sufficiently from the two original premises, but from the premises 'Every C is an A' and 'Every E is a C'.

5.10.3 The syllogism concluding to truth from falsehoods

> The power called 'the syllogism concluding to truth from falsehoods' is a syllogism's ability to conclude to a true conclusion from false premises. And its use is that we should not believe that it is necessary that if a conclusion is true, then the premises are true, or that one of them is true, in the same way as we know that if the conclusion is false, then the premises are false or one of them is.

This power is obvious. For let us consider the following syllogism in *Barbara:* 'Every stone is an animal and every horse is a stone; therefore, every horse is an animal'; it is clear that both premises are false, and the conclusion is true. Also, there can be a syllogism with a false major and a true minor, as follows: 'Every substance is an animal; every man is a substance; therefore, every man is an animal'. Also, there can be one with a false minor and a true major, as follows: 'Every animal is a substance; every stone is an animal; therefore, every stone is a substance'.

But Aristotle further determines in which specific modes and figures one can, and in which one cannot, infer a true conclusion from totally false prem-

ises, or even from a totally false major and true minor or conversely. And this should be looked up in bk. 2 of the *Prior Analytics*.[69]

5.10.4 The circular syllogism

> 'The circular syllogism', as this power of a syllogism is called here, is the ability of a syllogism to conclude from the converted form of either of its premises together with its conclusion to the other premise. And its use consists in knowing whether the terms are convertible, in order that we can also know whether by these terms it is possible to construct a demonstration 'with respect to what the thing is' [*secundum quod ipsum*].[70]

We should note that this power is called 'the circular syllogism' after its similitude to a real circle, for just as moving in a circle brings one back to where one started from, so also in this kind of circulation within syllogisms, just as from the premises of one syllogism one proceeds to the conclusion, so also does one get back to either of the premises from the conclusion and the converted form of the other premise.

We should also note that accidental conversion is not in question here, but only absolute conversion. For a universal affirmative is not formally converted in this way; it is converted only on the assumption that the terms are convertible. Therefore, it is obvious that this power applies only where convertible terms are concerned. And the point of this power is that it is necessary that if true universal premises entail a true universal conclusion with convertible terms, then also the syllogisms converted in the above-described manner consist of universal true premises leading to true conclusions and that this cannot hold with nonconvertible terms. But I do not see any important use of this power.

We should also note that with particular syllogisms there is no such circulation, for one premise has to be universal. But since the conclusion is particular, it is not possible to infer that universal premise from that particular conclusion with the other proposition, because to conclude to a universal both premises have to be universal. It would be possible, though, to infer the particular premise from that particular conclusion with the converted form of the universal premise.

69. Aristotle, *Prior Analytics* II.2–4.53b26ff.

70. See 8.6.4.

And from this it is obvious that this kind of circularity in affirmative syllogisms occurs only in the first mode of the first figure. For it does not occur in the second figure, since in that there are no affirmative modes, nor in the third, since in that there are only particular conclusions, nor in the second mode of the first figure, for that is negative, nor in the third or in the fourth, for there the conclusions are particular. But in the first mode there obviously can occur this kind of circularity, for example, if the first syllogism is 'Every rational mortal animal is risible; every man is a rational mortal animal; therefore, every man is risible'. It is then clear that the converted form of the major and the conclusion entail the minor, as follows: 'Everything risible is a rational mortal animal; every man is risible; therefore, every man is a rational mortal animal'. Similarly, the conclusion and the converted form of the minor entail the major as follows: 'Every man is risible; every rational mortal animal is a man; therefore, every rational mortal animal is risible'.

And we should note that this kind of circulation could not occur by taking the conclusion and one of the premises to conclude to the other premise. For the major and the conclusion would constitute the second figure, which does not conclude to an affirmative, whereas the minor and the conclusion would constitute the third figure, which does not conclude to a universal.

But there is a serious doubt as to Aristotle's claim that such circulation occurs even in negative syllogisms, such as *Celarent.* For example, let the first syllogism be the following: 'No B is an A; every C is a B; therefore, no C is an A'; it is true, as Aristotle correctly said, that one can infer the major from the conclusion and the converted form of the minor as follows: 'No C is an A; every B is a C; therefore, no B is an A', but it is not possible, as Aristotle also correctly pointed out, to infer the minor from the converted form of the major, converting it properly, and from the conclusion, for then both premises would be negative, from which nothing follows. But Aristotle says that it is necessary to convert the major in another way, analyzing it into an affirmative with an infinite subject, namely, 'Every non-A is a B', and then we would get the following syllogism: 'Every non-A is a B; no C is an A; therefore, every C is a B'.

At this point, however, some serious doubts arise. The first is that such a conversion is invalid, for this does not follow: 'No man is a stone; therefore, every non-stone is a man', for the first [proposition] is true and the second is false. The second doubt is also that that syllogism is not formally valid, for otherwise I could argue as follows: 'Every non-accident is a substance; no chimera is an accident; therefore, every chimera is a substance'; but here the premises are true and the conclusion is false.

But we can reply, maintaining Aristotle's position, that Aristotle does not

intend that such circulation and conversion should occur in every valid and true syllogism in *Celarent,* but only in those in which it holds that just as the terms of the affirmative premise are affirmatively convertible, so are the terms of the negative premise negatively convertible.

Two terms are called affirmatively convertible if both are such that either of them is truly and universally affirmed of the other. But it is not sufficient for two terms to be called negatively convertible in the previous claim if they are such that either of them is truly and universally denied of the other. It is also required that of whichever other term one of them is truly and universally affirmed, of that same term the other is truly and universally denied, and conversely, namely, that of whatever the one is truly and universally denied, of that the other is truly and universally affirmed. And in this way it is clear that the terms 'man' and 'donkey', or 'horse' and 'stone', are not negatively convertible, for 'stone' is truly denied of all donkeys, of which, however, 'horse' is not truly affirmed.

And we should also add here that Aristotle did not intend to speak about fictive terms, namely, ones that supposit for nothing, such as 'chimera' or 'goatstag', but about terms each of which supposits for something. For in this way the terms 'substance' and 'accident' are negatively convertible, and so are the terms 'creator' and 'creature', 'caused' and 'uncaused', 'dependent' and 'independent', 'corruptible' and 'incorruptible', and many others. I say, therefore, that with such negatively convertible terms the conversion posited by Aristotle is valid. For just as no substance is an accident, so every non-accident is a substance, and just as no creator is a creature, so every non-creature is a creator, and just as no corruptible is incorruptible, so every non-incorruptible is corruptible, etc.

And in this way the solution to the first doubt is clear. And it is equally obvious that the second doubt is not valid, for it does not provide a counter-instance except when a fictive term is involved, namely, one that supposits for nothing, such as [the term] 'chimera'.

5.10.5 The conversive syllogism

The power called 'the conversive syllogism' is the ability to conclude from the opposite of the conclusion of a given syllogism with one of the premises to the opposite of the other premise. And its use is that it enables one to know whether the first syllogism was a necessary consequence, if this happened to be doubted in the first place.

We should note that every valid consequence is such that the opposite of the consequent entails the opposite of the antecedent. And this is a property of a valid consequence, so that if what is propounded as a consequence is not a valid consequence, then the opposite of what is propounded as the consequent does not entail the opposite of what is propounded as the antecedent. And we take 'opposite' here in not just any sense of opposition but strictly for the contradictory opposite. Since, therefore, in a syllogism the antecedent is the conjunction consisting of the two premises, and the consequent is the conclusion, it is necessary that if the syllogism is a valid consequence, then the contradictory of the conclusion should entail the contradictory of that conjunction, namely, the disjunction consisting of the contradictories of those premises. For example, if 'Every B is an A, and every C is a B; therefore, every C is an A' is a valid syllogism, then it is necessary that 'Some C is not an A; therefore, either some B is not an A, or some C is not a B' be a valid consequence too. But then it is clear that a disjunction and the negation of its one member entails the other member, since it is necessary that one member of a true disjunction be true. But one member of a disjunction is denied by positing its contradictory; therefore, it is clear that a disjunction and the contradictory of one of its members entails the other member. For example, 'Some C is not an A or some C is not a B, and every C is a B; therefore, some C is not an A'; similarly, the following [consequence] is valid: 'Some B is not an A or some C is not a B, and every C is a B; therefore, some B is not an A'.

And from this we can conclude to the necessity of this power. For, since the contradictory of the conclusion of the original syllogism entails the disjunction of the contradictories of the premises, and if to this disjunction we add one of the premises, which denies one member of this disjunction that is its contradictory, we can infer the other member of this disjunction with necessity, this being the contradictory of the other premise; therefore, it is necessary in every valid syllogism for the contradictory of the conclusion together with one of the premises to entail the contradictory of the other premise.

This power is very useful. For when a syllogism is not an evident consequence, so that one doubts whether the conclusion follows from the premises, one should see whether from the opposite of the conclusion along with the major there follows the opposite of the minor by means of an evident consequence, or alternatively whether from the opposite of the conclusion along with the minor there follows the opposite of the major; for if this is so, then one has to conclude that the original syllogism was a valid consequence. And if it is clear that such a consequence from the opposite of the conclusion and one of the premises to the other premise is not valid, then one has to conclude that the original syllogism was not a valid consequence. This explains why Aristotle in bk. 1 of the *Prior Analytics* uses this method to prove that *Baroco*

and *Bocardo* are necessary consequences.[71] And one could prove the validity of the other modes of the second and third figures in this way, for in all modes of the second figure the major and the contradictory of the conclusion entail the contradictory of the other premise by means of the first figure, and in all modes of the third figure the contradictory of the conclusion with the minor entail the contradictory of the major.

We should note that in bk. 1 of the *Prior Analytics* Aristotle calls this kind of proof of the syllogisms of the second and third figures 'proof *per impossibile*'. But this is not a proper locution, since a conversive syllogism and a syllogism *per impossibile* are posited here as diverse powers of syllogisms. What we have here is, rather, a proof by conversive syllogisms, but Aristotle spoke in this manner because of the great affinity between conversive syllogisms and syllogisms *per impossibile,* as will be pointed out later.

5.10.6 The syllogism per impossibile

> But the power that we call 'the syllogism *per impossibile*' or 'the syllogism *ad impossibile*' is the ability to conclude from the opposite of the conclusion to be proved, along with some manifestly true proposition, to a conclusion manifestly false or manifestly impossible. And its use is that it enables us to know that the opposite of the conclusion to be proved is false or impossible, and, consequently, to know that the conclusion to be proved is true or necessary.

First we should realize that if we can prove that the contradictory of the conclusion to be proved is false, then it follows that the conclusion to be proved is true. For it is necessary that if one of the contradictories is false, then the other is true. In the same way, if we can prove that the contradictory of the conclusion to be proved is impossible, then it follows that the conclusion to be proved is necessary, because it is necessary that if one of the contradictories is impossible, then the other is necessary.

Next we should also note that we can prove a proposition to be false if from it and from another manifestly true proposition there follows a manifestly false proposition, because if both propositions are true, they cannot entail a false one. Therefore, if the conclusion appears to be manifestly false, then it is necessary to conclude that either both premises are false or that at least one of them is. Since, therefore, one of them may appear to be manifestly true, it

71. Aristotle, *Prior Analytics* I.6.28b15–22.

will be concluded that the other one is false. We prove in the same way that some proposition is impossible, if the proposition in question and another manifestly necessary proposition entail a manifestly impossible conclusion. For a possible antecedent cannot entail an impossible consequent. Therefore, it is clear that such a syllogism, by means of which we prove a proposition to be impossible in the above-described manner, is properly called *per impossibile* [by means of (something) impossible] or even *ad impossibile* [(leading) to (something) impossible], for it [leads] *by means of* an impossible premise *to* an impossible conclusion. And when we conclude that the premise in question is impossible, if it is the contradictory of the conclusion principally intended to be proved, we evidently conclude that that principally intended conclusion is necessary. And in this way the nature and use of this power is clear.

We should realize, however, that this power greatly differs from the previous one. First, because where the previous power is concerned it is necessary to formulate first the principal syllogism and then to convert it afterwards in the above-described manner. But there is a single syllogism *ad impossibile,* obviating the need to have another syllogism formed previously, or earlier, although, of course, consequences other than the syllogistic consequences also concur, namely, the one by means of which the impossibility of the premise is inferred from the impossibility of the conclusion, and the other, by means of which from the impossibility of that premise we infer the necessity of its contradictory, this being what is principally intended.

Second, they also differ because a conversive syllogism is used in order to prove that the first syllogism was a valid consequence, whereas a syllogism *per impossibile* is used principally to prove or to demonstrate a conclusion, even when it is merely categorical. As Aristotle says, however, there is some similarity between a syllogism *per impossibile* and a conversive syllogism, namely, that if some conclusion is demonstrated by means of a conversive syllogism embodying certain terms, then the same conclusion can be demonstrated with the same terms by means of a syllogism *ad impossibile,* and then that syllogism *ad impossibile* and that conversive syllogism will be convertible; further, if one of them is an evident consequence, then we can infer that the other is too, for one will follow from the other, in that the opposite of its conclusion with one of the premises entails the opposite of the other premise.

For example, if the following is an ostensive demonstration:[72] 'Every rational animal is risible; every man is a rational animal; therefore, every man is risible', and the truth of the premises is better known than the conclusion, then the same conclusion will be demonstrated *per impossibile* by converting

72. See 8.7.3.

the syllogism as follows: 'Every rational animal is risible; some man is not risible; therefore, some man is not a rational animal'; and this conclusion is manifestly false, just as its opposite was manifestly true; therefore, one or the other of the premises is false, but not the major, for that was posited to be manifestly true; therefore that minor is false that says that some man is not risible; therefore, its contradictory is true, namely, 'Every man is risible', and this is that we wanted to prove.

5.10.7 The syllogism from opposites

The last power, which we usually call 'the syllogism from opposites', is the ability of a syllogism to infer from opposed premises the predication of the same about the same, but negatively. And its use is that it enables us to know that it is possible to syllogize with two terms in the absence of a third dissimilar one.

We should note that premises can be opposed in two ways, namely, as contraries or as contradictories. If we have contraries, then they both are universal, and then a universal conclusion can be inferred. If they are contradictories, then one is particular; therefore only a particular conclusion is to be inferred.

Syllogisms from opposites occur in the second figure or in the third, but not in the first, for premises that are properly opposite should have the same subjects and predicates, which is not the case with the premises of the first figure, since there what is the subject in the major has to be the predicate in the minor.

From contrary premises they are constructed as follows: 'No discipline is laborious; every discipline is laborious; therefore, no discipline is a discipline'; from contradictory premises they are constructed as follows: 'No discipline is laborious; some discipline is laborious; therefore, some discipline is not a discipline'. And this mode of syllogizing is in the second figure, since we take it here that 'laborious' is the middle term and that 'discipline' in the first proposition is taken as the major extremity and in the second as the minor; for in this way these syllogisms are in *Cesare* and in *Festino;* but if we took the affirmative as the major proposition and the negative as the minor, then they would be in *Camestres* and *Baroco.*

And we should note that where such syllogisms from opposites are concerned, syllogisms in the second figure with a particular major and with a universal minor are valid, just as they are the other way round. And this is clear,

for we only need to transpose the premises and we get back the universal major and the particular minor, and the conclusion will remain unchanged.

Furthermore, one can syllogize from the same premises in the third figure, but to a different conclusion, namely, as follows: 'No discipline is laborious; every discipline is laborious; therefore, something laborious is not laborious'. For we take it that 'discipline' is the middle term and that 'laborious' in the first proposition functions as the major extremity and in the second as the minor extremity. And there can be a syllogism with an affirmative major and a negative minor just as well as with them the other way round, for one only needs to transpose the premises to get back the negative major and the affirmative minor, and the conclusion will remain unchanged.

Some people say that one could in this way syllogize even with only one term, as follows: 'Every man is a man and every man is a man; therefore, every man is a man'. For I use the term 'man' (since it serves as the subject in the major and the predicate in the minor) as the middle term, and I use the same term (since it serves as the predicate in the major and in the conclusion) as the major extremity, and (since it serves as the subject in the minor and also in the conclusion), I use it as the minor extremity. But this is not an appropriate position, nor is this case similar to what holds in syllogisms from opposites, for a syllogism has to have a conclusion different from either of the premises, such that one of the premises would not be sufficient to entail it without the other, for if one of them were sufficient, the other would be superfluous, and nothing that is superfluous to infer a conclusion should be assumed in a valid syllogism; but in the above reasoning with one term the conclusion is not different from either of the premises and it can be inferred separately from either one of them, which is not the case with syllogisms from opposites. And in this way it is clear that one can syllogize from two terms without a dissimilar term but not from a single term. And I said that the use of this power is that it enables us to know this.

But some people attribute another use to it, namely, its ability to drive someone who concedes opposites to a more evident absurdity, namely, the negation of something of itself. But it seems to me that this is not a more evident absurdity. For to concede contradictories to be true at the same time is against the first and most evident principle, and to concede contraries to be true at the same time is the nearest position to this absurdity, for a contrary immediately entails a contradictory by subalternation; whereas to deny the same term of itself is not such an evident absurdity, for it can be verified, namely, if the term supposits for nothing; for it is true that a chimera is not a chimera.

And this much should suffice for the present as far as the treatise on syllogisms is concerned.

Treatise 6
On dialectical loci

6.1 Chapter 1: Some general preliminaries

6.1.1 The aim of the treatise

> This treatise, which is about dialectical loci, has been excerpted by our author from Boethius's *Topics*.[1] Therefore, just as Boethius provided certain general preliminaries to his treatment of dialectical loci, so too our author provides some preliminaries, namely, [some remarks concerning] what an argument is and what argumentation is, and how they differ, and furthermore on what constitutes an enunciation, a proposition, a question, and a conclusion, and how they agree or differ, and then finally how many species of argumentation there are and what they are. All this is the aim of the first chapter of this treatise.

This is the sixth treatise of this work, and it deals with dialectical loci. It contains six chapters: the first concerns some preliminaries [which have to be considered] before the consideration of dialectical loci as such; the second is about the description of the locus and about some general divisions of loci; the third is about the loci of substance; the fourth is about the loci concomitant with substance; the fifth is about extrinsic loci; and the sixth is about intermediate loci.

The first chapter has five principal parts. The first propounds the aim of the treatise and, in particular, that of the first chapter. The second defines 'argument' and 'argumentation', the third describes 'proposition', 'question', and 'conclusion', the fourth divides argumentation into its species, and the fifth reduces the other species of argumentation to that of syllogism.

This first part is obvious as it stands.

1. In fact, the term *topic,* deriving from the Greek, is also widely used in the English-language secondary literature to refer to what in the vernacular we might also call 'commonplace' *(locus communis).* Since in the course of his explanation Buridan exploits the technical (logical and physical) as well as the vernacular senses of the Latin term (meaning simply 'place'), however, I will use the Latin term in the translation, which is not an uncommon practice in the secondary literature, either.

6.1.2 The definition of argument and argumentation

An argument is a reason producing belief concerning some doubtful matter. An argumentation is an explication of an argument by means of an expression.

Since the name 'reason' [*ratio*] is usually taken in very many different ways, our author says that here, in the definition of 'argument', 'reason' is taken for the middle term by means of which some conclusion is proved; therefore, he expounds the definition of *argument* thus: 'an argument is a reason producing belief concerning some doubtful matter', i.e., it is the middle term that proves the conclusion. An *argumentation,* however, is not only that middle term, but rather a whole expression composed of the middle term and the extremities, which are contained in the premises and the conclusion. And since the middle term virtually contains the extremities, the premises, and the conclusion, as well as the whole argumentation, it would seem to be correctly said that an argumentation is the explication of an argument by means of an expression.

But it does not seem to me that Boethius intended to call a single term an 'argument'; rather, Boethius's intention seems to be that an argument and an argumentation differ from one another as do a mental process and a vocal process. For an argument is a process [*processus*] in the mind whereby the mind, on account of the mental premises known to it, is compelled to concede a conclusion previously not known or doubted. And thus 'reason' is taken here for the whole mental process; whence it is called 'argument' [*argumentum*] as though it were '[something] arguing the mind' [*arguens mentem*], i.e., something inwardly coercing the mind to concede and to assent to what it has doubted, or what it would have doubted if it had been posed as a question. But an argumentation is a vocal process expressing and significatively explicating this mental process. And it seems to me that this point clearly emerges from Boethius's words when he says: "An argument is a reason producing belief concerning some doubtful matter; but an argument is not the same as an argumentation, for it is that force [*vis*] or reason [*ratio*] on account of which the conclusion is drawn when something dubious is proved that is called an 'argument', whereas the [vocal] expression [*elocutio*] of the argument is called an 'argumentation', and this is why the argument is the force [*virtus*] or the meaning [*mens*] and the point [*sententia*] of the argumentation, whereas the argumentation is the explication of the argument by means of an expression";[2] this is what Boethius says.

2. See Boethius, *De topicis differentiis,* trans. E. Stump (Ithaca: Cornell University Press, 1978), p. 30, 1173D23–32. My translation here follows Buridan's version of Boethius's text.

6.1.3 The description of proposition, question, and conclusion

A proposition is an expression that signifies something true or something false. A question is a doubtful proposition. A conclusion is a proposition proved by an argument or by several arguments. An enunciation is convertibly the same as a proposition, as Boethius seems to imply when he says: 'For an enunciation, whether it is so called by itself or with reference to something else, is a proposition'.

We should note that although the same expression is sometimes called a proposition, sometimes a question, and sometimes a conclusion, nevertheless, these three names, if they are taken strictly, have widely differing import. For an enunciation is called a *question* on account of its doubtfulness, and for this reason someone who doubts it and wishes to become certain about it propounds it in the style of a query. But the same enunciation, if it has been inferred from, and proved by, known premises, is then called a conclusion; and if, thus proved, it is taken as a premise to prove another conclusion, then it is properly called a *proposition,* whence something is called a proposition [*propositio*] as though it were the positing of something for the inferring of something else [*quasi pro alio inferendo positio*]. But it is true, as Boethius remarks, that the name 'proposition' is sometimes taken more broadly, as a synonym of the name 'enunciation', and then it is described as an expression that signifies something true or false. Therefore, it is in this way that not only a premise, but also a conclusion, or an enunciation taken by itself, is called a proposition, and it is in this sense that 'proposition' is taken here in our text henceforth.

6.1.4 The division of argumentation into its species

(1) There are four species of argumentation, namely, syllogism, induction, enthymeme, and example. (2) It was said earlier what a syllogism is, in the preceding treatise. (3) An induction is a reasoning from several singulars to the universal that has to be proved, as in 'Socrates runs and Plato runs . . . and so on for the singulars; therefore, every man runs'. (4) An enthymeme is an incomplete syllogism, i.e., an expression in which the conclusion is inferred from one expressed and from another unexpressed premise of a syllogism, as in 'A man is an animal; there-

fore, a man is a substance'; for if the other premise, 'Every animal is a substance', were added, then it would be a complete syllogism. (5) An example is a movement from one particular to another particular to be proved on the basis of some similarity found between them, as in 'It is bad for the people of Paris to fight the people of Reims; therefore, it is bad for the people of Artois to fight the people of Amiens'; the consequence is valid because of this similitude: just as the people of Paris and Reims are neighbors, so too are the people of Artois and Amiens.

The fourth part obviously contains five very important sections. The first of these provides the division of argumentation, the second is about the syllogism, the third is about induction, the fourth is about the enthymeme, and the fifth is about the example.

Concerning the first section we have to note that strictly speaking [*de proprietate sermonis*], the division of argumentation into syllogism, induction, enthymeme, and example is not a correct division. For when we talk about division in the primary and strict sense, a division requires first that the members of the division contain the entire scope of what is divided,[3] second, that the members of the division not overlap,[4] and third, that the members of the division not comprise more than what is divided.[5] But as to the first member, *syllogism* is found to extend beyond the scope of *argument.* That this is so is obvious from the fact that there are many syllogisms that are by no means argumentations. For an argument or argumentation requires not only the necessity of the consequence but also the proof of the conclusion, so that the consequent should be proved on the basis of the antecedent, as is clear from the definition of argument. But for such a proof to occur it is also required that the antecedent be better known than the consequent. Sometimes, however, there are syllogisms, inductions, enthymemes, or examples with an antecedent that is equally or more doubtful than the consequent, or even with an evidently false antecedent leading to an also evidently false conclusion, as in 'Every horse is a goat and every man is a horse; therefore, every man is a goat'; and it is clear that there is no proof of the conclusion here; therefore, such syllogisms, inductions, enthymemes, or examples are not arguments or argumentations. But this division is valid insofar as the members do not overlap and they contain the whole scope of what is divided, even though they also contain more.

And it is hence also clear that the terms 'syllogism', 'induction', 'enthymeme', and 'example' are not, properly speaking, species of the term 'argu-

3. That is to say, the division should be exhaustive.

4. That is, the members of the division should be mutually exclusive.

5. That is, the members of the division taken together and what is divided should be coextensive.

ment', for a genus must be predicated universally of its species. But the author calls them [species] because they share in a certain condition of a species, namely, that the adequately enumerated species of a genus are disjunctively and affirmatively predicated of the genus taken universally, as in 'Every animal is either a man or a brute', or 'Every living body is either an animal or a plant'; for in this way every argumentation is either a syllogism, or an induction, or an enthymeme, or an example.

The second section, which is about the syllogism, refers us to the preceding treatise.

Concerning the third section, which is about induction, we should note that an induction is not formally valid unless by the addition of another premise it becomes a syllogism, as will be explained in the following part. Some people, however, want to claim that by virtue of the clause 'and so on for the singulars' an induction concludes formally and of necessity. But I believe that that clause is not an integral part of an induction, and this is clear from the fact that that clause is neither a proposition nor part of a proposition. And if it is said that it is posited in place of a proposition, I would reply that in saying 'Socrates runs and Plato runs . . . and so on for the singulars; therefore, every man runs', if the clause 'and so on for the singulars' is taken in place of a proposition, then that proposition should be more clearly explicated, and one would have to scrutinize what that would be, but this is not easy to state.

For if we say that the proposition is this: 'Every man other than Socrates and Plato runs', then this proposition is already universal, and thus there will be no induction, namely, a progression from singulars to a universal. Indeed, it is also clear that there would not be any proof in induction, but *petitio principii* [begging the question], for even if we know that Plato is risible and Socrates is risible, we still doubt whether every man is risible. For we doubt equally or even more the proposition 'Every man other than Socrates and Plato is risible'; indeed, since this is also universal, it will not be cognized by the senses, and it is not clear why this proposition should in some way be better known in the intellect than the proposition 'Every man is risible', for those other people are neither sensed nor cognized.

But perhaps it will be said that that proposition is known in the intellect and is conceded on account of those singulars, because the intellect considering [them] does not perceive a difference or a reason why it should be otherwise in the case of other people than it is in the case of Socrates and Plato; therefore, the intellect together with those singulars adds and concedes this clause, or proposition, namely, that every man other than Socrates and Plato is risible, from which it eventually concludes that every man is risible. But I reply that, by saying this, one would have to say that that clause or proposition would not simply be a premise whence to infer that conclusion, but would instead be

a conclusion inferred from the singulars, and proved from the consideration of the intellect that there is not or there does not appear to be a reason why it should be otherwise with the others. For one premise of an argumentation should not be known from another, because then it would already be a conclusion and the other would be the antecedent, and this would constitute an argumentation that had no further conclusion.

And if this is so, we should say that it is not necessary in every valid induction to induce over all the singulars, for in many cases this would be impossible, since they are infinite to us; rather, it is sufficient to induce over many, and the intellect, on the basis of its natural inclination toward truth, perceiving no counterinstance in any of them, nor any reason why there should be a counterinstance in another, is compelled not only to concede that this is the case with them, but [it also has to concede] the universal proposition, which then becomes an indemonstrable principle, to be assumed in [the given] art or science without demonstration. For this is how we know the indemonstrable principle that every fire is hot, and that every magnet attracts iron, and that all rhubarb purges bile, and that everything that comes to be in nature comes to be from some preexisting subject, and so on for many other indemonstrable principles.

So this is what Aristotle intended in the prologue of the *Metaphysics*[6] and in bk. 2 of the *Posterior Analytics*[7] [when he says] that the principles of art and science are known to us by experience, i.e., by experimental induction from the several sensations stored in memory. And Averroes speaks about this beautifully, in bk. 2 of the *Physics*,[8] when he says that a universal principle that was doubtful earlier is concluded by induction without surveying all the singulars, and that this is how induction comes within the scope of demonstrative science. And he adds that on account of such induction a universal principle is sometimes accepted more quickly and sometimes more slowly, depending on the nature of the principle and on the nature of the person considering [the case].

We should also note that not every induction proceeds from singulars absolutely but sometimes from singulars under some aspect, i.e., from cases less universal to something more universal, as when in several species we see such and such to be the case and that in none there appears to be a counterinstance,

6. Aristotle, *Metaphysics* I.1.981a3–4.

7. Aristotle, *Posterior Analytics* II.19.100a7–9.

8. *Aristotelis de Physico auditu libri octo cum Averrois Cordubensis variis in eosdem commentariis,* in Averroes, *Aristotelis Opera cum Averrois Commentariis* (Venice, 1562–74; reprint, Frankfurt am Main: Minerva, 1962), f. 79rb D.

and so conclude that this is the case universally in the genus, as is clear in Boethius's example.[9] For if in choosing a helmsman to steer [*regere*] a ship we should use art rather than chance, and likewise in choosing a charioteer to drive [*regere*] the horses, and if also for ruling [*regere*] the state we should not leave to chance the election of the ruler, but should do it upon the counsel of discretion and prudence, then we should universally conclude that in every case in which a ruler is needed we should appoint the ruler not by chance but in the light of art or prudence.

As to the fourth section, which deals with the enthymeme, it appears to me that it should be noted that not every consequence from one categorical to another is to be called an enthymeme. For an enthymeme is an incomplete syllogism because it is not valid on account of its form until by the addition of the other premise it is turned into a complete syllogism. Therefore, consequences by subalternation, conversion, or equivalence are not to be called enthymemes, for they are formal consequences without the addition of another premise. Indeed, I take it that such consequences, strictly speaking, are not called arguments; for an argument should prove one extremity of another by means of a further mediating term, namely, one that is diverse from both extremities.

But as far as the last section, which deals with example, is concerned, it seems to me that induction and example differ from one another in two ways: first, because an induction leads to a universal conclusion, whereas an example leads to a singular one; second, because an induction in the antecedent requires the consideration of many singulars, whereas an example can infer from one singular another singular. An example, however, can also proceed from several singulars, at least, as long as it proceeds to an equally singular conclusion, and an example is all the more perfect and yields greater credence if it proceeds from many manifest examples than if it does so only from one. For example, if we perceive this fire to be hot and harmful, and thus also many others, and if from this we conclude that another fire presented to us is hot and harmful, then this would only be an example; but if we concluded that every fire is hot, then that would be an induction.

9. Boethius, *De topicis differentiis,* p. 44, 1183B24–40.

6.1.5 The reduction of other species of argumentation to syllogism

(1) Other species of argumentation are reduced to syllogism as to the more principal species. So induction is reduced thus: 'Socrates runs and Plato runs . . . and so on for the others, and every man is Socrates or Plato . . . and so on for the others; therefore, every man runs'. (2) On the other hand, an enthymeme is reduced by the addition of the missing premise; for in any enthymeme there are three terms, just as in a syllogism, namely, two extremities, of which the conclusion is composed, and the middle term, which is placed in the [existing] premise with one extremity, and then the premise to be added has to be constructed from that middle term and the other extremity, and it is in this way that we get a syllogism. For example, if we have the enthymeme 'A man runs; therefore, an animal runs', then 'animal' and 'runs' are the two extremities, and 'man' is the middle term; since, therefore, the explicit premise is composed of 'man' and 'runs', it is necessary to compose the premise to be added from 'man' and 'animal'; and then we shall have a syllogism in the third figure, namely: 'A man runs; every man is an animal; therefore, an animal runs'. (3) An example is an imperfect induction; therefore, it is reduced to induction, and then, by the mediation of induction, to the syllogism.

This part reduces the other species of argumentation to syllogism. And it contains three sections. The first reduces induction, the second the enthymeme, and the third the example.

In connection with the first section we should note that if we are dealing with induction, in which we cannot induce separately based on all the singulars because of their infinity or exceedingly large number, and we have to append the clause 'and so on for others', then the example provided in the text is correct. For 'runs' is the major extremity, and 'man' is the minor extremity, and we use the terms 'Socrates', 'Plato', 'and so on for others' as the middle term, which is used as the subject in the major proposition and is predicated in the minor; for we use the conjunction 'Socrates runs and Plato runs . . . and so on for the others' as the major proposition, and it is the proposition 'Every man is Socrates or Plato . . . and so on for the others' that we use as the minor. And some people, quite reasonably, reduce these premises to categorical premises, so that they will obviously constitute the first mode of the first figure, as follows: Everything that is Socrates or Plato . . . and so on for the others, runs; every man is Socrates or Plato . . . and so on for the others; therefore, every man runs'.

Now if we were to say that the clause 'and so on for the others' should not be added in the reduction, then the situation is such that the induction is performed over all the singulars or such that this is at least not impossible. I say 'over all [the singulars]' as when we say 'The moon does not twinkle, nor does Mercury, nor does Venus, nor does the sun, nor does Mars, nor does Jupiter, nor does Saturn; therefore, no planet twinkles',[10] and then a reduction to syllogism can be performed as before, namely, by adding the minor that every planet is either the moon, or Venus, etc.

But if an induction cannot be performed over all the singulars, as in the case of our concluding from the singulars that every fire is hot, then such an induction is not reduced to syllogism, nor does it prove its conclusion on account of its being a formally valid consequence, nor because it may be reduced to a formally valid consequence, but because of the intellect's natural inclination toward truth. For just as the vegetative soul is naturally inclined to generate something similar to itself but does not generate unless the appropriate dispositions preexist, so the intellect is naturally inclined to assent to the universal truth of the indemonstrable principles but does not give its assent until it is disposed to do so by the consideration of many singulars, sometimes in more, sometimes in fewer cases, in accordance with the nature of the principle and the nature of the person doing the considering, as the Commentator said.

Concerning the second section, which is about the reduction of the enthymeme, it is sufficiently described in the text how this comes about. Still, it is true that sometimes we have difficulty with the reduction, because it is not sufficient to add one premise, but we have to add more, from which, along with the ones explicit in the enthymeme, we will not get a single syllogism but rather several; or again, sometimes the reduction does not yield categorical syllogisms, i.e., ones consisting of two categorical propositions, but rather hypothetical syllogisms, i.e., ones consisting of hypothetical premises, or premises of which one is hypothetical. Or again [there is difficulty] because enthymemes have to be reduced to syllogisms with oblique terms, or to others not fitting into the syllogistic figures, as Aristotle distinguished such cases in bk. 1 of the *Prior Analytics;* these will be clarified later in appropriate detail.

But in connection with the third section, which is about the reduction of the example, we should realize that just as we call an enthymeme an incomplete syllogism, so also an example is usually called an incomplete induction. For an induction differs from an example because an induction requires that

10. This the list of all the planets known in Buridan's time. The list also includes the sun, because it was not regarded as a star, since according to contemporary cosmology the stars were fixed on the outermost sphere of the heavens, and all the other heavenly bodies below them were regarded as planets.

the antecedent consist of all the singulars, or as many as would suffice to generate belief in the universal conclusion that is inferred, but in an example it suffices if the antecedent consists of one singular or a few singulars, and the proposition concluded is not a universal but another singular contained under that universal. In this way, therefore, an example is reduced to an induction, for an example could be turned into an induction by adding to the antecedent as many singular premises as would be sufficient for generating belief in the universal conclusion, and then that universal conclusion could be inferred instead of the singular one that is inferred in the example.

6.2 Chapter 2: Description of *locus* and some classifications of loci

6.2.1 The description of locus

A *locus* is a seat [*sedes*] of an argument or that from which an appropriate argument is drawn.

The second chapter provides the description of the locus and some common classifications of loci. It contains four major parts: the first assigns the description of the locus, the second divides the locus into the maxim [*locus maxima*] and the difference of the maxim [*locus differentia maximae*], the third divides the difference of the maxim into intrinsic, extrinsic, and intermediate, and the fourth divides the intrinsic locus into the locus from substance and the locus from the concomitants of substance.

The first part is expounded differently by different people. Some people say that since there are two kinds of loci, namely, loci that are maxims and loci that are differences of maxims; both kinds are described in this part. For "a locus is a seat of an argument" is understood to be the description of a maxim, and "a locus is that from which an appropriate argument is drawn" is understood to be the description of the difference of the maxim. Others say that here we have two descriptions of a locus, namely, the one according to which a locus is a seat of an argument, and the other according to which a locus is that from which an appropriate argument is drawn, and that both of these descriptions apply to a locus that is a maxim as well as to one that is a difference of the maxim. And this can better be explained once the division of the locus

into the maxim and the difference of the maxim has been given, and when the differences between the members of this division have been clarified.

*6.2.2 The division of locus into the maxim [*locus maxima*] and the difference of the maxim [*locus differentia maximae*]*

(1) Loci are divided [into two sorts], for some loci are loci that are maxims, and others are loci that are differences of maxims. (2) A locus that is a maxim is a self-evident proposition [*propositio per se nota*] that is conceded without any need for its being proved by means of other, better known propositions; indeed, such a proposition is one by means of which other, doubtful, or less known propositions can be proved; for example, 'Every whole is greater than its part', 'Whatever is predicated of the definition is also predicated of what is defined', and 'Of similar things the judgment is similar'. (3) A locus that is a difference of the maxim consists in the terms of which the maxim is constituted, and the relation [*habitudo*] of which accounts for the maxim's evidentness and truth. For example, since the proposition 'Whatever is truly affirmed of the species is also truly affirmed of the genus'[11] is a locus that is a maxim, the terms 'species' and 'genus' constitute the locus that is the difference of the maxim; for it is on the basis of the relation of a species to its genus that the maxim is true and effective.

The second part has three sections, namely, the division of 'locus', the description of the locus that is a maxim, and the description of the locus that is a difference of the maxim.

For the clarification of everything that has been said so far, we should note that 'locus' [place] is not taken here in its primary signification, for in this way a locus [i.e., a place] is the surface of the containing body, etc., as is clear from bk. 4 of the *Physics*.[12] It is therefore taken metaphorically, on account of its similarity to 'place' [*locus*] in the previous sense. For just as a place properly

11. To be sure, we should not take this maxim as claiming that whatever is *universally* stated of the species is also *universally* stated of the genus, which is obviously false. But certainly whatever is true of (some or all members of) a species is also true of at least some members of the genera of that same species.

12. The reference is to the Aristotelian definition of 'place'. Aristotle, *Physics* IV.4.212a20.

speaking contains quantitatively that which is in the place, so in an argument that which is called a locus contains virtually the whole argument; for it is by virtue of the locus that the argument generates belief in the conclusion.

And from this it is clear that a maximal proposition as well as its terms deserve to be called a locus in this metaphorical sense. For that maxim contains universally the whole power of the argument, and again, the aforementioned terms of that maxim, on account of their relation [*habitudo*] to one another, contain virtually the maxim itself; indeed, the maxim is but a certain exemplification of the relation that the terms have to one another, on account of which the whole argument has its power and efficacy. And thus it is clear that 'locus' is correctly divided into the maxims and into those terms, and it is truly predicated of them.

And from this it is also clear that in the first part of this chapter we had two descriptions of locus and that both applied to maxims as well as to differences of maxims. For when it is said [that a locus is] a seat of an argument, 'seat' is not taken properly, in the way that the throne of the king or the pope is properly called his seat, but it is, rather, taken metaphorically (as has been said of 'locus'), because of its similarity to a seat properly so called. For just as a man is consolidated and comes to rest in his seat, so also is the whole power of the argument and the mind of the arguer consolidated and brought to rest in that maxim and in the relation of those terms to each other, for which reason both the maxim and the difference of the maxim are correctly called the seat of the argument. In the same way, both of them are correctly called that from which an appropriate argument is drawn. For of that which is virtually contained in something else we say that it is drawn from it; but we have already said that the argument is virtually contained both in the maxim and in the aforementioned terms.

Finally we should note that the aforementioned terms are called the 'difference of the maxim' because the maxims are necessarily diverse if they are constituted of diverse terms.

6.2.3 The division of the difference of the maxim into intrinsic, extrinsic, and intermediate

(1) The locus that is the difference of the maxim is divided into the intrinsic, the extrinsic, and the intermediate. (2) An intrinsic one, according to Boethius, is taken from the substance, or something concomitant with

the substance, of a term posited in the question. (3) An extrinsic locus is one that is drawn from something extrinsic, for it is drawn neither from the substance, nor from something concomitant with the substance, of a term posited in the question. (4) A locus is called intermediate on the basis of its sharing both in an intrinsic and extrinsic locus.

The third part contains four sections, namely, one division and then three descriptions of the three members of that division.

And it is very difficult to expound this division so that its members would not appear to overlap in any suppositum, and so that each member would contain all loci that Boethius says are contained in it. For in the first place it would appear that we have to add, as something self-evident, that a locus is not called *intrinsic* because the consequent is virtually contained in the antecedent, for then every locus would be intrinsic. Again, an intrinsic and an extrinsic locus are not distinguished because in an extrinsic locus the terms that are the difference of the maxim do not supposit for the same thing, whereas in an intrinsic locus they do supposit for the same thing, for in this way every locus would either be intrinsic or extrinsic and none would be intermediate, and because in this way the locus from the cause to the caused or from the integral whole to its part would not be intrinsic, which is against what Boethius says. Again, a locus is not called intermediate because it is a relation "in between" [*habitudo media*] the antecedent and the consequent, or between the term posited in the antecedent and the term posited in the consequent, or between the terms that are said to be the difference of the maxim, or in whatever manner you wish to put the matter, for in that way every locus would be intermediate.

Therefore, some people expound this division so that an intrinsic locus is [nothing but] the terms of the maxim that confirm the consequence, so that the entailing term and the entailed term of this consequence supposit convertibly for the same [things], or of one of them it is verified that it is in the other in some manner of *being in*.[13] An extrinsic locus is, then, [nothing but] the terms of the maxim that confirm the consequence but are such that the entailing term and the entailed term of this consequence do not supposit for the same [things], nor do they signify the same, nor [are these terms such] that of one of them it is verified that it is in the other in some manner of *being in*. The contrasting intermediate locus then is [nothing but] the terms of the maxim that confirm the consequence, in such a way that the entailing term and the en-

13. As subsequent examples will make it clear, the point here is that in an intrinsic locus the two terms in question should either supposit for the same thing or things, or the supposita of the one should be in the supposita of the other, in some sense of 'being in'.

tailed term of this consequence do not supposit for the same [things], but they do signify the same (as do 'color' and 'colored', or 'white' and 'whiteness').

And it seems to me that in this way this division is correct and cannot be disproved. But according to this exposition [this division] does not accord with the intention of Boethius and the author concerning all loci. For if what they say is correct, then according to this exposition the locus from privative terms and the locus from contradictories would have to be intermediate loci. For a privative term signifies the same as its opposite positive term, which is obvious, since the positive term is placed in the nominal definition of the privative term, and even the term 'non-man' signifies whatever the term 'man' signifies, although these are contradictory terms.[14]

And without a doubt, as Boethius says, the same term can be divided by means of several diverse divisions each of which is correct in that its members comprise the whole extension of what is divided and do not overlap with respect to any suppositum, and yet no member of any of those divisions is equivalent *per se* to some member of another division. And Boethius gives numbers as an example; for numbers are divided into even and odd, and in another way into prime or noncomposite, and secondary or composite, and yet neither is it the case that every even number is composite, nor that every odd number is noncomposite, nor that every even number is noncomposite, nor that every odd number is composite.

Therefore, as Boethius recalls, another division of loci was given by Themistius, and another by Tullius, but there is nothing wrong in this.[15] Thus, Tullius said that every locus is either intrinsic or extrinsic, and he called only the locus from authority an extrinsic locus, whereas all other loci he called intrinsic, irrespective of whether our author calls them extrinsic, intrinsic, or intermediate. And this was a correct and exhaustive division, and Tullius correctly assigned the loci to be contained in one member and those in the other.

Nor should the division of Themistius be disapproved for this reason, for [Tullius and Themistius] were talking equivocally. For names are significative by convention [*ad placitum*]; therefore, diverse authors and philosophers often use the same names equivocally, according to diverse intentions, and any author who uses those names can legitimately expound those names in

14. Of course, these terms do not and cannot *supposit for* the same things in a proposition, but in accordance with Buridan's theory of signification this is so precisely because they signify the same things outside the mind, but the latter signifies the same things positively that the former signifies negatively on account of the fact that it also signifies the concept of negation in the mind.

15. See Boethius, *De topicis differentiis,* pp. 71–78.

accordance with the intentions according to which he uses that name, and his audience and readers should take his words in accordance with the intention that the author had or would appear to have had.

I say therefore that Tullius meant by 'intrinsic locus' every locus deriving from a term that on account of its signification has some determinate relation to the term posited in the question, and it is on the basis of this relation that the maxim—and thus the whole argument—holds. In this way the locus from contraries is intrinsic; for if I ask whether Socrates is white, and it is argued the he is not, because Socrates is black, therefore, Socrates is not white, it is clear that the argument, the locus, and the maxim are drawn from the term 'black' on account of the relation it bears, on the basis of its signification, to the term 'white' posited in the question, namely, the relation of contrariety. In the same way, if I ask whether justice is good, and I argue that it is because [whoever is] just is good, I draw the argument and the locus from the term 'just' and the relation it bears to the term posited in the question. Therefore, in this way even this locus should be called intrinsic according to the exposition of the name given by Tullius. If, however, someone were to ask whether prime matter is perpetual, and it would be argued that it is, because this is how Aristotle answered [the question], then this is an extrinsic locus, for the argument is drawn from the name 'Aristotle', which from its signification and imposition bears no relation to the terms posited in the question, according to which relation the argument would hold. It is obvious, therefore, that this division, as it has been stated by Tullius, has been correctly given.

In accordance with Themistius's definition, however, which is mentioned by our author, we can briefly say that an intrinsic locus is one that holds by virtue of an agreement between the terms which is such that they supposit for the same or such that what is supposited for by one is included in what is supposited for by the other, in some manner of *being in* [*essendi in*]; an extrinsic locus is one that holds by virtue of a relation other than this kind of agreement, and an intermediate locus is one that connects one relation of this kind of agreement with another one.

And we should note concerning the description of the members of the above-described division that whoever thinks differently about them should stretch [*trahere*] those descriptions, if he can, to conform to his opinion; alternatively, it is not unacceptable to omit those descriptions altogether if there seem to be better and clearer ones. For Boethius, Tullius, and Themistius often used names in senses other than their proper ones.

6.2.4 The division of intrinsic locus into the locus from substance and the locus from the concomitants of substance

Intrinsic loci are subdivided so that some are called 'from substance' and some 'from the concomitants of substance'. A locus from substance is one whose entailing term and entailed term supposit convertibly for the same, as in the cases of a definition and what is defined, a description and what is described, or an interpretation and what is interpreted. A locus from the concomitants of substance is one that is intrinsic, but its above-specified terms do not supposit convertibly for the same.

We should note that Boethius and our author do not properly use the term 'substance' in giving this division, namely, insofar as substances are distinguished from accidents or the terms in the category of substance from the terms of the categories of accidents. This is because the loci from definition, from description, and from the interpretation of the name, all of which they call ones 'from substance', can be exemplified by means of terms in the categories of accidents as well as by terms in the category of substance. But they call at will [*ad placitum*] every definition, description, or interpretation of a name the 'substance' of what is defined, described, or interpreted, because these items convertibly supposit for the same or convertibly signify and connote the same, in the sense that one signifies everything that the other does and conversely, or because the one supposits for everything that the other does or conversely. And so, if Boethius and our author describe the locus from substance and the locus from the concomitants of substance otherwise, namely, by words other than the ones we just used, then their words should be so glossed that they amount to the descriptions that we have just given in our text.

6.3 Chapter 3: On loci from substance

6.3.1 The division of loci from substance and the descriptions of its members

(1) Loci from substance are divided in such a way that some are from the definition, some are from what is defined, some are from the description, some are from what is described, some are from the interpretation, and some are from what is interpreted. (2) A locus from the definition is the relation of the definition to what it defines, and a locus from what is defined is the relation of what is defined to its definition. (3) And we should describe analogously the locus from description and the locus from what is described, and the locus from the interpretation and the locus from what is interpreted.

The third chapter deals specifically with the loci that are called 'loci from substance'. It contains five parts. The first lays down the division of loci from substance and the descriptions of its members. The second pursues loci from definition and from what is defined, the third, loci from description and from what is described, the fourth, loci from interpretation and from what is interpreted, and the fifth, some loci reducible to these.

The first part contains three sections. The first lays down the division of loci from substance, the second, descriptions of loci from definition and from what is defined, and the third, the descriptions of loci from description and from what is described and of loci from interpretation and from what is interpreted.

But before dealing with these sections in particular, we should clarify some questions that do not pertain solely to loci from substance but that concern both these and other loci in general, be they loci from the concomitants of substance or even extrinsic or intermediate [loci].

The first question is whether that which is commonly said is true, namely, that a locus should be denominated from its antecedent, or that which entails, and not from the consequent, or that which is entailed.

The negative answer is argued for thus: it is reasonable to denominate everything from its end, as is said in bk. 2 of *On the Soul*,[16] but the consequent is the end of the argument, for the antecedent, the argument, and the whole argumentation are ordered to acquiring belief about the consequent as their end; therefore, the locus should instead be denominated from the consequent.

Again, the antecedent is one (or more) proposition, and not one term, and

16. Aristotle, *On the Soul* II.4.216b24.

yet a locus is denominated not from a proposition but from a term, as in 'from species', 'from genus', 'from the whole' or 'from the part'.

The opposite, however, is commonly held. And [the reason why] is obvious: for then a locus is called '[a locus] from definition' if the definition is in the antecedent and not in the consequent; and thus also, conversely, a locus is called '[a locus] from what is defined' if what is defined is in the antecedent and not in the consequent.

Another question is whether, if we argue thus: 'A man runs; therefore, an animal runs', we should in this case say that this is a locus *from the species* or a locus *from man.* And it seems that it should not be said to be a locus from the species, but rather from man. This is so because in the first place a locus should be denominated from the entailing term; but it is the term 'man' and not the term 'species' that was the entailing term, for the term 'species' did not occur in the antecedent.

In the second place, the terms 'species' and 'genus', or even the terms 'definitum' [i.e., what is defined], 'whole' and 'part', 'cause' and 'caused', 'similar' and 'contrary', etc., are in fact relative terms; therefore, if all such loci were to be called 'from species', 'from genus', 'from the whole' or 'from the part', etc., then they could also truly be called loci *from relatives;* but this should not be asserted.

Again, what we intend to ask when we say: 'Whence the locus?' and when we ask 'What maxim?' is also unclear.

Another question concerns what is going on when we say: "The locus from definition is the relation of the definition to what is defined," or when we say: "The locus from species is the relation of the species to the genus." What should we understand by the term 'relation' here, i.e., what does it signify, and for what thing does it supposit?

And the final question is whether the division of loci *from substance* that we have given is adequate and exhaustive.

As far as the first question is concerned, we should concede that a locus is not denominated from the whole antecedent but rather from a term, be it complex or incomplex, that is posited in the antecedent as the middle term by means of which the conclusion is inferred and proved; further, this is the term that is *not* put in the consequent, and the locus is denominated from this term, insofar as it has some determinate relation to the term that *is* put in the consequent, and it is on account of this relation that the consequence is valid. Therefore, although the term 'man' is a species and a whole-in-mode [*totum in modo*], nevertheless, if I say 'A is not a man; therefore, A is not a white man', we do not say that we have here a locus from species, but rather from a whole-in-mode, for its relation to the term put in the consequent on account of which

the consequence is valid is not the relation of species to genus but that of a whole-in-mode to a part-in-mode.

But then, against this, one questions whether a locus should be denominated only from that middle term posited in the antecedent, or whether also, along with this, from the term that is put in the consequent. And I say that it is denominated from both. This is clear, because the locus *from definition,* or the locus *from genus,* is not described only as a relation of the definition, or as a relation of the genus, but as a relation of the definition *to what is defined* or as a relation of the genus *to the species.* Therefore, although the term 'man' is something defined and is a certain whole-in-mode, still, if it becomes a middle term in an argument designed to prove some conclusion, [the locus] will not be called a locus from definition unless [this term] is related to what is defined, nor would [the locus] be called a locus from the whole-in-mode unless [the term] is related to its part-in-mode.

So a locus is denominated from the entailing term as being that whence, or *from which,* the argument proceeds, and it is denominated from the entailed term as being that *to which* the argument proceeds. And therefore it is reasonable that when we ask: 'Whence [is] the locus?', we reply only with the antecedent, and if we were to ask, 'To what [is] the locus?', we would respond with the consequent. Therefore, the locus from definition is the same as the locus to what is defined. And if someone asks why we more usually ask about whence the locus is than to what it is, we reply that this is so because in an argument the antecedent is more principal and powerful than the consequent, since it has the power to infer the latter and generate belief about it. And even if it were to be conceded that everything should be denominated from its end, this would not mean that it could not be denominated from other causes.

To the second principal question I reply that in the argument 'Every man runs; therefore every animal runs', we should not say that here we have a locus from man to animal, for neither a man nor an animal is put in the argument, but rather that this is really a locus from the term 'man' to the term 'animal', and it is on the basis of the relation of these terms that the consequence is valid. But, furthermore, since the term 'man' is a species and the term 'animal' is its genus, it follows that this really does proceed from the species to its genus. But, then, when it is said that the terms 'species' and 'genus' are not put in the argument, I concede it, and this is why I say that we have here a locus not from the term 'species' to the term 'genus', but from a species to its genus. For the locus from the term 'species' to the term 'genus' would be a locus from relatives. And the same goes for the locus from definition; for it is from the definition to what is defined, and not from the term 'definition' to the term 'definitum' [what is defined], for then that would be a locus from

relatives, as when one says: "The expression 'rational mortal animal' is the definition of the name 'man'; therefore, the name 'man' is defined by the expression 'rational mortal animal'," just as if we were to say: 'Socrates is the father of Plato; therefore, Plato is the son of Socrates'.

To the third question, namely, what we intend to ask when we pose the question 'Whence the locus?', I reply that we ask about the name of the entailing term, since it is named after the relation this has to the entailed term by virtue of which the consequence is valid. Therefore, although it is true to say that in the argument 'A man runs; therefore an animal runs' the locus is from the term 'man' to the term 'animal', this nevertheless does not suffice, for this does not signify according to what relation to the entailed term we have the locus from this term; however, this is expressed when we say that it is a locus from the species, i.e., from the term 'man', with respect to the relation in terms of which it is called a species.

But what do we want to ask in saying: 'What maxim?'; I briefly reply that we are looking for the self-evident proposition that confirms the argument, and that need not be composed of the terms placed in the argument but [may be composed] of terms of second imposition suppositing for the terms whose relation to one another is what accounts for the validity of the argument. So, the maxim that confirms the argument 'A man runs; therefore, an animal runs' does not consist of the terms 'man' and 'animal', but rather of 'species' and 'genus', which supposit for the former; for the maxim is: 'Whatever is truly affirmed of the species is truly affirmed of the genus'.

And it can be concluded as a corollary that in the case of demonstrations, which are syllogisms consisting of self-evident premises or of premises sufficiently proved by other syllogisms, it is not necessary to look for maxims, but only for the premises of those other syllogisms. For they conclude of themselves, on account of their form; therefore, they do not need another proof by virtue of which the consequence is valid.

To the fourth question, namely, 'What is the thing that is the relation of species to genus or of definition to what is defined?', I respond that every relation of a species to a genus, on account of which it is called a species, is the relation of the species 'man' to the genus 'animal', or the relation of the species 'whiteness' to the genus 'color', and so on for all species and genera, just as every relation of father to son on account of which a father is called a father is the relation of this father to this son, or of that other father to that other son, and so on for each father and son related in this way to one another.

If, therefore, descending [to the level of singulars], you were to ask what the relation [*habitudo*] of the term 'man' to the term 'animal' is on account of which the term 'man' is called a species, I would say that this is the same as asking what thing the relation of two to one is on account of which two are

said to be the double [of one], or again what thing is the relation of Socrates to Plato on account of which Socrates is said to be Plato's father, or similar to Plato, or diverse from Plato. And this amounts to asking whether abstract terms from the category of relation supposit for the same things as their concrete [counterparts] or for some superadded dispositions, and this has to be and has been determined elsewhere.[17] If, therefore, you say that the relation of two [things] to one [thing] on account of which those two are the double [of that one] is nothing but those two [things], I [accordingly] say that the relation of the term 'man' to the term 'animal' whereby the term 'man' is the species of the term 'animal' is the term 'man' itself.

To the final question one can reply that the division is exhaustive. For every locus from substance is one [of the members] listed in that division or can be reduced to one of them. For they are the more principal ones, and what is less principal[18] is to be reduced to what is more principal, and we shall see this in more detail later. But we should take heed as to how the members of this division differ.

First we should see how *definition, description,* and *interpretation of a name* differ. I declare, therefore, that sometimes, and indeed often, a description or even the interpretation of a name is called a 'definition', and then we are using the name 'definition' broadly. But sometimes we use it strictly, and then neither a description nor an interpretation of a name is called a 'definition'; rather, what is called a 'definition' is an expression in reply to the question 'What is it?' [*in quid*] and is predicable convertibly with that of which it is the definition, and essentially in all its parts, so that no part thereof is predicated of it denominatively; for it is in this manner that the definition of a species is constituted of its genus and by its essential differences, which divide that genus and constitute that species. A description is an expression convertibly predicable of that of which it is said to be the description, not essentially, but rather denominatively with respect to some of its parts, as would be the definitions of attributes by their subjects, or also the definitions or indications or substantial terms by their proper attributes or accidents, as, for example, if we were to say that 'neighing animal' is the definition of horse. A nominal definition [*quid nominis*] is usually called an 'interpretation', and it signifies and

17. J. Buridan, *Quaestiones in Aristotelis Metaphysicam: Kommentar zur Aristotelischen Metaphysik* (Paris, 1518; reprint, Frankfurt am Main: Minerva, 1964), bk. 5, q. 9.

18. The Hubien text here has the apparently unresolved alternative readings: et minus principale secundum *imaginationem principiatorum // E mutationem principalioris I* reducendum est ad principalius—'and what is less principal with respect to the imagination of the things constituted by certain principles E // with respect to the change of that which is more principal I* should be reduced to what is more principal'.

connotes entirely the same as, and convertibly with, some term, of which it is said to be the interpretation, as when the expression 'place not filled with body' would be called the interpretation of the name 'vacuum'.

It is true, though, that there are still some other definitions, namely, causal definitions, which deserve to be called definitions, and which are neither descriptions nor interpretations of names. But we shall discuss these and all their differences more thoroughly in the treatise on divisions, definitions, and demonstrations.[19]

6.3.2 The loci from definition and from what is defined

(1) A definition is an expression signifying what the thing is in terms of its essentials. (2) The locus from definition is [the definition's] relation to what is defined [definitum], and it contains four arguments and four maxims: (3) first comes an affirmative argument, in which the same thing is predicated of the definition and of the definitum, as in 'A rational mortal animal is risible; therefore, a man is risible'; for here we have the locus from definition, the maxim of which is 'Whatever is truly affirmed of the definition is also [truly affirmed of] the definitum'; (4) second, [we have] an affirmative argument in which the definition and the definitum are predicated of the same [item], as in 'Socrates is a rational mortal animal; therefore, Socrates is a man', of which the maxim is 'Of whatever the definition is truly affirmed, so is the definitum'; (5) third, a negative argument, in which the same [item] is denied of the definition and of the definitum, as in 'A rational mortal animal is not running; therefore, a man is not running'; the maxim is 'Whatever is truly denied of the definition is truly denied of the definitum'; (6) fourth, a negative argument in which the definition and the definitum are denied of the same [item], as in 'A stone is not a rational mortal animal; therefore, a stone is not a man'; the maxim is 'Of whatever the definition is truly denied, so is the definitum'. (7) But the locus from the definitum works the other way around, namely, when the entailing term is the definitum, placed in the antecedent, and the definition is the entailed term, placed in the consequent, as in 'A man runs; therefore, a rational mortal animal runs'; and this locus contains

19. That is, in Treatise 8 of this work.

four arguments and four maxims, analogous to the locus from definition, the examples of which I omit, since it is easy to construct them.

The second part contains seven sections. The first is the description of 'definition', the second is the description of 'locus from definition' (and we have said enough about these in the preceding part), the following four sections explain four types of arguments and four types of maxim pertaining to the locus from definition, and the last section is about the locus from the definitum. And all these have been put forth so clearly that they do not require exposition.

We should note, however, that there are also other types of arguments that hold by virtue of the locus from definition, to which the aforementioned maxims would not directly apply, but only their modified versions according to the requirements of those arguments, as when we deal with arguments from oblique terms in which neither the definition nor the definitum is subjected or predicated. For example, 'A donkey sees a man; therefore, a donkey sees a rational mortal animal'; now here we have [a case of] the locus from the definitum to the definition, and the maxim could be 'Whatever [items] are in some way truly attributed to the definitum taken obliquely are truly attributed in the same way to the definition also taken obliquely'. And perhaps the universal maxim of the locus from definition, containing all others, would be 'Whatever [items] are in some way truly attributed to the definition, those [items] are in the same way truly attributed to the definitum'; for whether the attribution is affirmative or negative, or universal or particular, and whether it is the attribution of the predicate to the subject or conversely, and whether it is that of a nominative to an oblique term or conversely, and so on for the other modes, the rule will always hold true, subject to adherence to those same modes, because the definition and the definitum convertibly supposit for the same things.

6.3.3 The loci from description and from what is described

(1) A description is an expression indicating what a thing is in terms of its accidental [features], as for example 'risible animal' is said to be the description of 'man', and 'curved nose' is the description of 'pug'.[20]

20. Note that in accordance with the policy adopted throughout this work, I translate *simum* as 'pug', whenever it is being used as an adjective substantivated in the neuter gen-

(2) The locus from description is the description's relation to what it describes, (3) and it contains four arguments and four maxims, analogous to the locus from definition, and the locus from what is described is also analogous to the locus from what is defined [*definitum*]; and I omit the examples, since it is easy to construct them.

The third part contains three sections: the first is the description of 'description', the second is the description of 'locus from description' (and these two sections are to be expounded in accordance with what has been said in the first part of this chapter), the third section lists the types of arguments and maxims belonging to the loci from description and what is described, and the whole is clear enough.

6.3.4 The loci from interpretation and from what is interpreted

(1) We should realize that there are two kinds of interpretation: one kind is not converted with that which is interpreted, as when '[something] that hurts the foot' [*laedens pedem*][21] is purported to be the interpretation of the name 'stone', and this is not in question here; the other kind is converted with what it interprets, as for example 'lover of wisdom' is the interpretation of the name 'philosopher', and this is what is in question here. (2) An interpretation is the exposition of a name by an expression equivalent to it. (3) A locus from interpretation is the relation of the inter-

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der, i.e., when it has the function to refer to a nose, connoting its shape; but I will translate *simus* (or *simum,* when it is being used purely adjectivally) as 'snub', when it has the function to connote the shape of the supposita of the substantive (namely, *nasus,* 'nose') without which it is incomplete and cannot function as the subject term of a proposition. This policy simply exploits the fact that whereas 'pug' can be used both as an adjective and as a substantive in English, 'snub' (disregarding the equivocal verbal, and the corresponding nominal meaning of the same utterance) can only function as an adjective in the construction 'snub nose', which is precisely the point Buridan wishes to bring out when he contrasts *simum,* as substantivated, with *simus* as a pure adjective. (Note also that the phrase 'snub-nosed' in English is only a further denominative phrase, derived from 'snub nose', in the same way as, say, 'long-legged' is derived from 'long leg', etc.) See 8.2.4.

21. This is the popular etymology of *lapis* (stone) in the Middle Ages. See Petrus Helias, *Summa super Priscianum,* ed. L. Reilly (Toronto: Pontifical Institute of Mediaeval Studies, 1993), p. 70, l. 89.

pretation to what it interprets. (4) And the locus from interpretation and the locus from what is interpreted contain arguments and maxims analogous to the loci from definition and from definitum, and from description and from what is described.

The fourth part contains four sections. The first gives alternative meanings of the name 'interpretation', concerning which we should note that the first sense of 'interpretation', which we excluded from this discussion, only applies to a certain derivation of the name from an expression [used] in the course of its imposition for the purpose of signifying. When we see that that expression supposits or can supposit for certain things with which we are acquainted, we impose on those things a name that shares some of its sounds or syllables with the terms of that expression; for example, since the things we now call *lapides* [stones] sometimes hurt our feet, someone imposed on them the name *lapis* [stone], taking the first syllable from *laedere* [hurt] and the second from *pes* [foot].[22] And such an interpretation need not be convertible with what is interpreted, nor is it strictly speaking a perfect interpretation and analysis [*expositio*] of a name.

The second sense of 'interpretation', which is relevant here, is the one described in the second section, and this description, as well as the description of 'locus from interpretation', which is mentioned in the third section, was sufficiently discussed in the first part of this chapter.

Likewise, the fourth section, which teaches how we should list arguments and maxims pertaining to these loci, namely, to those *from interpretation* and f*rom what is interpreted,* is also sufficiently clear.

6.3.5 Some loci reducible to the above

There are also other loci from substance, which are strictly speaking neither from the definition, nor from what is defined, nor from the description, nor from what is described, nor from the interpretation, nor from what is interpreted, but are reducible to these. [Such loci include,] for example, the locus from a synonym to its synonym, or perhaps that from the essential difference to its immediate species, or conversely, and the locus from the proper attribute[23] to its subject, or conversely, and the

22. The English-speaking reader will easily recognize a similar method at work in coinages such as 'edutainment', 'infomercial', 'workaholic', and 'breathalyzer'.

23. A 'proper attribute' of a subject is a property of a subject of a certain kind, which

locus from an expounding expression or proposition [*exponens*] to the expression or proposition expounded [*expositum*],[24] or conversely.

It is obvious that these loci should be titled 'from substance', given that the locus from substance was correctly described earlier. For in these the entailing and the entailed [terms] convertibly supposit for the same [things] or convertibly signify the same [things].

The locus from a synonym to its synonym, therefore, is to be reduced to the locus from definition to its definitum, or conversely, for the reason that just as a definition is predicated essentially and convertibly of its definitum, so also is a synonymous term of a term synonymous with it. For there is no denomination here, since neither of them signifies or connotes anything that the other does not. And an argument from a synonym would be 'Socrates is clothed; therefore, Socrates is dressed', if we assume that 'to put on some clothes' and 'to get dressed', as well as 'clothes' and 'dress', are synonymous pairs.

I also said that perhaps the locus from an essential difference to the species that it immediately constitutes is a locus from substance. And I said 'perhaps' because people have various opinions. For some people think that every difference, if it is truly essential, without any extrinsic connotation, is convertible with the species that it immediately constitutes under the proximate genus; and then the declaration is true, and this locus is reduced to the locus from definition, for that difference is predicated essentially and convertibly of that species, just like the definition, and yet that difference is a part of the definition of that species. Other people think that no essential difference taken in itself is convertible with the species, but many taken together are, as for example, 'rational' is not convertible with 'man', for it applies [also] to others, as Porphyry says,[25] nor is 'mortal', for it [also] applies to brutes, but the aggregate 'rational mortal' is convertible with 'man'; and if this were the case, then a locus from a difference to a species would be called not a locus from substance but one from the concomitants of substance, and it would be reduced to the locus from the genus, for the difference would agree with the genus in that it would be predicable of the species essentially but not convertibly (and Aristotle says the same in bk. 1 of the *Topics*).[26] And to determine which one of these opinions is true belongs to [the discussion of] bk. 7 of the *Metaphysics*.[27]

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can only belong to a subject of that kind. For example, 'even or odd' is a proper attribute of number, for this is a property that can belong only to numbers.

24. For the terminology to be used in the translation see n. 29 below.

25. See Porphyry, *Isagoge,* in *Five Texts on the Mediaeval Problem of Universals,* ed. P. V. Spade (Indianapolis: Hackett, 1994), p. 16.

26. Aristotle, *Topics* I.8.103b12–15.

27. Aristotle, *Metaphysics* VII.12.

But if the second opinion is accepted, then from that aggregate of several differences that is convertible with the species we will still have a locus from substance, and then it will be reduced to the locus from definition, and this for the same reason as that given concerning the difference convertible with some species if there be any such.

Furthermore, the locus from a subject to its property [*proprium*], or to its proper attribute [*propria passio*], or conversely, is also a locus from substance in accordance with the description of 'locus from substance' given above, for example: 'A man runs; therefore, something risible runs'. And this is reduced to the locus from description, for the property is predicated of the subject convertibly but not essentially, just as occurs in the description of what is described, and yet it can be a part of the description of that subject.

Furthermore, the locus from the expounding proposition to the expounded proposition is also called a locus from substance, not because they are convertibly predicated of each other (for this is impossible, since a proposition taken significatively cannot be a subject or a predicate, and if it is taken materially, then it cannot be affirmed of another proposition)[28] but because the exponent and the expositum[29] convertibly signify and connote the same things, both inside and outside the mind, in the same way as do an interpreted name and its interpretation, as will be seen elsewhere.[30] Therefore, such loci from exponent to expositum and conversely are to be reduced to the loci from the interpretation to what is interpreted and conversely; for the exponent resembles the interpretation of the expositum.

These loci differ greatly from the ones mentioned earlier, however, for not every predicate that could be truly affirmed of the exponent could be truly affirmed of the expositum, since they are not even affirmed of each other, as has been noted. But where certain predicates are concerned, namely, those with respect to which these loci are applicable, it is necessary that whichever of those predicates is truly affirmed of the exponent be also truly affirmed of the expositum, and conversely; those predicates are 'true', 'false', 'possible', 'impossible', 'necessary', and 'contingent'. Therefore, neither are the maxims in these loci similar to the ones mentioned earlier but rather are as follows: 'If

28. Clearly, this is because that affirmation would state that this proposition is another proposition.

29. That is, the phrase that expounds a given phrase (the 'exponent', pl.: 'exponents'), and the phrase that is thus expounded (the 'expositum', pl.: 'exposita'). Henceforth I will use this transcription of Buridan's terminology since other solutions do not appear to work in all subsequent occurrences. Furthermore, adopting this terminology will also indicate the close relation between this locus and the medieval logical doctrine of *exponibilia,* propositions to be analyzed in terms of other propositions. 5.1.3 n. 7.

30. Namely, in Treatise 8 of this work. See 8.2.3.

the exponent is true, then so is its expositum', 'If the exponent is false, then so is its expositum', and likewise with 'possible', 'impossible', 'necessary', and 'contingent'. And likewise in the converse cases: 'If the expositum is true, then so is its exponent', etc.

But the locus that I called 'from the exponent to the expositum' is called by many people the locus 'from the exponents to the expositum'. But it seems to me that we should say that one expositum has only one exponent, though this is in fact a conjunction consisting of several categoricals, as when the proposition 'Every man apart from Socrates is running' is expounded by the conjunction 'Socrates is not running and Socrates is a man and every man other than Socrates is running'. Should someone wish to call any categorical of this conjunction an 'exponent', I would at least make a distinction so that the whole conjunction would be called 'the total exponent' and the categoricals 'the partial exponents', and then what has been said will be true of the loci from the total exponent to its expositum and conversely. For example, 'Socrates does not run and Socrates is a man and every man other than Socrates is running; therefore, every man apart from Socrates is running'; so, 'Whence the locus?' 'From the exponent'; and the maxim is 'If the exponent is true, then the expositum is true'.

And we should realize and note well, not only with respect to the above loci but also with respect to others, that we can argue in the move from the exponent to the expositum not only in the way we have just argued, but also by taking the exponent materially in the antecedent and the expositum materially in the consequent. [Take f]or example: "The proposition 'Socrates does not run and Socrates is a man and every man other than Socrates is running' is true; therefore, the proposition 'Every man apart from Socrates is running' is true"; the locus is from the exponent, and the maxim is 'If the exponent is true, then the expositum is true'.[31] And the same goes for the other loci; for example, in the locus from the species to the genus we can not only construct an argument such as 'A man runs; therefore, an animal runs', where the terms 'man' and 'animal' supposit personally, but we can also make an argument in which they supposit materially. For example, "'Runs' is truly affirmed of 'man'; therefore, it is truly affirmed of 'animal'," i.e., the predicate 'runs' is truly affirmed of the term 'man', and therefore, it is truly affirmed of the term 'animal'; the locus is from the species to its genus, and the maxim is 'Whatever is truly affirmed of the species is truly affirmed of its genus'.

Indeed, it is clear that a dialectical maxim more immediately confirms an argument formed with its terms taken materially than one formed with its

31. The passage from the beginning of the paragraph to this point seems to have been inserted on the basis of one codex alone (marked E in the Hubien text).

terms taken personally, or significatively. For after adding the maxim to the antecedent, the conclusion evidently follows by means of a syllogism or syllogisms before another conclusion would appear to follow.[32] For example, from the maxim I would argue as follows: "Whatever is truly affirmed of the species is truly affirmed of its genus; but the term 'man' is a species and the term 'animal' is its genus; therefore, whatever is truly affirmed of the term 'man' is truly affirmed of the term 'animal'." And then this conclusion will be the major of the second syllogism, and the antecedent of the first argument will be the minor, namely, that the predicate 'runs' is truly affirmed of the term 'man'; and the consequent of the first argument will be evidently concluded, namely, that the predicate 'runs' is truly affirmed of the term 'animal'. But the consequent 'An animal runs' would not be so evidently concluded merely from the addition of the maxim to the antecedent 'A man runs'. Indeed, on the basis of that maxim we cannot get an evident consequence, except with some assumptions to be added or implied, namely, that it further follows that since the predicate 'runs' is truly affirmed of the subject 'animal', therefore, 'An animal runs' is true and that it also follows that since 'An animal runs' is true, therefore, an animal runs;[33] and the same goes for the term 'man' given its own exigencies.

6.4 Chapter 4: On loci from the concomitants of substance

6.4.1 The description and the division of the locus from the concomitants of substance

(1) Next, the loci from the concomitants of substance are discussed. And it was said earlier what a locus from the concomitants of substance is. (2) The loci from the concomitants of substance are divided, because some are from the whole, some from the part, some from the cause, some

32. Again, this sentence seems to be inserted from E alone.

33. Buridan's point here is that we would also need these two further consequences: this is why I used the otherwise redundant 'since. . . , therefore,. . .' construction, to clearly mark out the antecedents and the consequents of these conclusions.

from the effect, some from generation, some from corruption, some from the uses, and some from common accidents.

The fourth part is about the loci from the concomitants of substance, and it contains eighteen parts. The first part is about the description and the division of the locus from the concomitants of substance, the second is about the description and division of loci from whole and part, the third is about the loci from the universal whole and its part, the fourth is about the loci from the integral whole and its part, the fifth is about the loci from the whole-in-quantity and its part or parts, the sixth is about the loci from the whole-in-mode and its parts, the seventh is about the loci from the whole-in-place and its part, the eighth is about the loci from the whole-in-time and its part, the ninth is about the description and division of loci from cause and effect, the tenth is about the loci from the efficient cause and its effect, the eleventh is about the loci from the material cause and its effect, the twelfth is about the loci from the formal cause and its effect, the thirteenth is about the loci from the final cause and its effect, the fourteenth is about the locus from generation, the fifteenth is about the locus from corruption, the sixteenth is about the loci from uses, the seventeenth is about the loci from concurrent accidents, and the eighteenth is about some loci from the concomitants of substance other than the ones mentioned but that are perhaps reducible to them.[34]

The first part has two sections: the first propounds the aim of the chapter, referring us to the previously given description of loci from the concomitants of substance, and the second divides or enumerates the loci from the concomitants of substance.

The first section is clear in itself and from what was laid down earlier. [The question] concerning the second section, namely, whether this division or enumeration of the loci from the concomitants of substance is exhaustive, will be settled when we are dealing with the members [of the division]. But we only ask at present about the mode of expression, namely, whether the locus from the whole, or the locus from cause, or any of the others should be called a 'locus from the concomitants of substance' or a 'locus from a concomitant of substance'.

And it immediately seems obvious to me that we should call each of them a 'locus from a concomitant of substance'. It is, nevertheless, possible to argue for the same conclusion by the locus from the universal whole, by the locus from the integral whole, by the locus from efficient cause, and by the locus from generation; and then, speaking in the plural, those loci can correctly be called loci from the concomitants of substance. But it would also ap-

34. Here I omit translation of the reference to the *incipits* of the division of the text *(Et ubi incipiant illae partes videbitur in processu)* just as I did elsewhere.

pear that if there were diverse conclusions consisting of diverse terms, with one argued for on the basis of the locus from the whole and with the other on the basis of the locus from cause, then those loci could perhaps be more appropriately called loci *from the concomitants of substances* than loci *from the concomitants of substance,* taking 'substance' still in the sense in which Boethius took it, namely, for the definition, description, or interpretation, or even for a convertible term; this is because diverse terms, unless they are convertible, do not have the same substance in this sense, but, rather, they have diverse substances.

6.4.2 The description and division of loci from whole and part

(1) The locus from the whole is the relation of the whole to its part, and the locus from the part is the relation of the part to its whole. (2) The loci from the whole are divided, because some are from the universal whole, some from the integral whole, some from a whole-in-quantity, some from a whole-in-mode, some from a whole-in-place, and some from a whole-in-time. (3) And the locus from the part is divided analogously, for some are from a part of the universal whole, some from a part of the integral whole, etc.

The second part provides the description and division of loci from whole and part, and it contains three sections. The first is the description of the loci from whole and part, which is clear enough on the basis of what has been said in the earlier chapters. The second section provides the division of the locus from the whole, and the third is the division of the locus from the part, concerning which it will be easier to see whether they involve any difficulties once we have discussed each member.

6.4.3 The loci from the universal whole and its part

(1) A universal whole is something that is susceptible of being predicated essentially of several things; or alternatively, a universal whole is

something predicable of something else essentially and is superior to it. (2) A part of a universal whole, of which that whole is predicated essentially, is said to be inferior to that universal whole; and such a part is usually called a 'subjective part'. (3) The locus from the universal whole is [the whole's] relation to its part or parts, and the locus from the part of the universal whole is the relation of the subjective part to its universal whole. (4) The locus from the universal whole is valid destructively, but not constructively. And I say that it is not valid constructively because [for example] this is not valid: 'A donkey is an animal; therefore, a donkey is a man'; but it is valid destructively: 'A stone is not an animal; therefore, a stone is not a man'; the locus is from the universal whole, and the maxim is: 'Of whatever the universal whole is denied, of that each part is also denied'. (5) The locus from the part of the universal whole or from the subjective part to its whole is not valid destructively, but it is valid constructively. And I say that it is not valid destructively because [for example] this is not valid: 'A donkey is not a man; therefore, a donkey is not an animal'. But it is valid constructively, whether the subjective part is the subject or the predicate. I say first, "whether it is the predicate," as in 'Socrates is a man; therefore, Socrates is an animal', [where] the maxim is 'Of whatever the subjective part is truly affirmed, thereof its universal whole is also truly affirmed'.[35] And I also say "or it is the subject," as in 'A man runs; therefore, an animal runs', [where] the maxim is: 'Whatever is truly affirmed of the subjective part is truly affirmed of its universal whole'. (6) We should also note that the locus from the genus to its species, as well as that from the species to its individual, is contained under the locus from the universal whole, for every genus is a universal whole with respect to its species, and every species with respect to its individual. And in terms of an analogous reason, the locus from the species to its genus or from the individual to its species is contained under the locus from the subjective part.

The third part is about loci from the universal whole and from its part, and it contains six sections. The first is the description of a universal whole, the second is a description of its part, the third provides descriptions of loci from the universal whole and from its parts, the fourth shows in which ways the

35. The Latin text of the Hubien edition available to me at this time is certainly corrupt here. What the text provides as the maxim relevant to the inference in question is the same as what it provides for the next inference. But Buridan's point is precisely that whereas in the first the part-whole pair should occur in the predicate position, in the second it should occur in the subject position. So we obviously need the converse of the second maxim here, as provided in the translation.

locus from the universal whole is valid or is not valid, the fifth shows the same concerning the locus from the subjective part, and the sixth involves a notable point.

As to the first section we should realize that the names 'universal whole' and 'subjective part' are names of second intention, just as are 'definition', 'definitum', 'genus', and 'species', and as such they appropriately supposit for predicable and subjectible terms.

We have an instance of the locus from the universal whole if I argue as follows: 'A stone is not an animal; therefore, a stone is not a man'. And here the locus is not from the name 'universal whole' but rather from the universal whole that is the term 'animal'. And enough has been said about this in the first part of the previous chapter.

Second, we should note that a term is called superior to another because it is always universally affirmed of the other should a proposition be formed, but not conversely. And every such superior [term] can be called a 'universal whole', taking the name 'universal whole' in a broad sense. Because of the importance of superior [terms] that are essential, however, authors wished to use the name 'universal whole' more narrowly, restricting it to essential superior [terms].

But here we have to bear in mind that [in the course of a movement] from any superior [term], whether essential or denominative, to its inferior, the loci are applicable in the manner in which they have been said to be applicable [in the movement] from the universal whole to its subjective part, and they are also valid conversely, namely, [in the movement] from the inferior to the superior, in the manner in which they have been said to be valid [in the movement] from the subjective part to its whole. For example, 'colored' is superior, although not essential, to 'donkey', and so is 'animal' to 'risible'; therefore, this is valid: 'A is not colored; therefore, A is not a donkey', or even 'A is not an animal; therefore, A is not risible', and likewise this is valid in the other direction: 'A is a donkey; therefore, A is colored', or even 'A is risible; therefore, A is an animal'. And the maxims are 'Of whatever the superior [term] is denied, thereof the inferior is also denied' and 'Of whatever the inferior is predicated, thereof the superior is also predicated'.

And these consequences, from the universal whole to its subjective part and conversely, or, more generally, from the superior to the inferior and conversely, appear [to be valid] not only through these logical maxims but also otherwise, by reducing them to syllogisms. For since we assume 'colored' to be superior, whether essentially or denominatively, to 'donkey', it follows from the description of 'superior' that colored is truly affirmed universally of donkey (i.e., the term 'colored' of the term 'donkey'); whence one has to concede [the proposition] 'Every donkey is colored'. And then in all the afore-

mentioned consequences, by adding 'Every donkey is colored' to the antecedent, the consequent follows by means of a complete syllogism. For example, let the argument be 'A is not colored; therefore, A is not a donkey'; after adding to the antecedent that every donkey is colored, the conclusion follows by *Baroco* thus: 'Every donkey is colored; A is not colored; therefore, A is not a donkey'. Next, let the argument be 'A is a donkey; therefore, A is colored', and then after adding the aforementioned proposition we shall have a syllogism in *Darii* as follows: 'Every donkey is colored; A is a donkey; therefore, A is colored'. Again, if the argument is 'A donkey is A; therefore, a colored thing is A', then we get a syllogism in *Disamis* as follows: 'A donkey is A; every donkey is colored; therefore, a colored thing is A'.

Then the second section is correspondingly obvious on the basis of the explanation of the first. And the third section is also clear from the explanation of the foregoing.

But as to the fourth section, we should bear in mind, with respect to both this locus and all the others, that an argument is called 'constructive' if it entails an affirmative conclusion and 'destructive' if it entails a negative one. But this rule should be accepted, namely, that whether we argue constructively or destructively, the consequence is not valid from the nondistributed universal whole to its part, but it is valid if the whole is distributed. For it was said a long time ago that the consequence from a more ample nondistributed term to a less ample one is not valid; therefore, this is valid: 'A is not an animal; therefore, A is not a man', and this is not valid: 'A is an animal; therefore, A is a man'. Similarly, if the universal whole is the subject, then this is valid: 'A non-animal is running; therefore, a non-man is running', or 'No animal is running; therefore, no man is running' (however, some people do not subsume this example under the locus from the universal whole, for it appears to come under the locus from quantity, and this will be discussed later). But without distribution this is not valid; for example: 'An animal is running; therefore, a man is running'.

Again, the consequence from a distributed superior [term] to an inferior is valid, not absolutely, but assuming the constancy of the inferior, i.e., that it supposits for something, as in 'Every animal is awake; therefore, every fly is awake'; for if there were no flies, the conclusion would not be true even if the antecedent were true.

Concerning the fifth section we should say that, whether constructively or destructively, the consequence from the subjective part to its whole together with distribution is not valid, for example, 'Every man is running; therefore, every animal is running', or 'No man is running; therefore, no animal is running'. But it is valid in the absence of the distribution of the whole, both

affirmatively, as in 'A man is running; therefore, an animal is running', and negatively, assuming the constancy of the subject, but otherwise not. For supposing that every animal is awake and that there are no flies, this is not valid: 'A fly is not awake; therefore, an animal is not awake', for the antecedent is true and the consequent is false. But the consequence would be valid assuming that there is some fly, for then this will be true: 'Every fly is an animal', and if it is added to the antecedent, then we get a syllogism in *Bocardo:* 'A fly is not awake; every fly is an animal; therefore, an animal is not awake'. But I will explain later what the maxims of the loci or arguments of this kind are, and why, although I am supposed to be talking about the universal whole and its part, I seem to be dealing here with the whole-in-quantity and its part, since I am talking about distribution.

The last section is obvious enough. Therefore, arguing that 'A man is running; therefore, an animal is running', when it is asked "Whence the locus?" I could reply: "From the superior to the inferior," or, more specifically, "From the universal whole to its subjective part," or even more specifically, "From the genus to its species." And the maxims are to be assigned analogously, both the more general and the more specific ones.

But we should still air some common objections to what has been said. For it would appear that the locus from the superior to the inferior is valid without distribution, given that this is valid: 'A being exists; therefore, a substance exists', for there cannot exist some being without a substance; and thus this is also valid: 'A substance exists; therefore, God exists'; and likewise this is valid: 'A number [of things] exist; therefore, two [things] exist'. In a similar manner it is argued that the locus from the subjective part to its whole is not valid affirmatively, for this is not valid: 'Socrates begins to be white; therefore, Socrates begins to be colored'; neither is this valid: 'A man differs from [any] donkey; therefore, a man differs from [any] animal.'[36]

To the first objection I reply that those consequences would be valid even if the entailing term were superior and the entailed term were inferior, but they are not valid on the ground that one is superior and the other is inferior. Indeed, the consequence 'A being exists; therefore, a substance exists' is valid on account of the relation of the effect of the material (or subjective) cause to its

36. *Homo differt ab asino; ergo homo differt ab animali.* Another *grammatically* possible, and, on the surface, more faithful translation could be: 'A man differs from a donkey; therefore, a man differs from an animal', which of course would be valid in English. But Buridan's logical doctrine that 'differs' distributes the predicate excludes this interpretation. In any case, the objection works only if we take 'differs' to have this import; hence the parenthetical additions in the translation.

cause; for every accident has a substance subjected to it, unless the opposite happens by a miracle.[37] But the natural scientist would say that if the effect of the material cause exists, then its matter must also exist; if, however, we were to say that some accident, or indeed that every accident, exists by divine power without a substance subject to it, 'An accident exists; therefore, a substance exists' would still follow, or even 'A being exists; therefore, a substance exists', for it follows that God exists, by the locus from the effect of the efficient cause to its cause; for nothing can exist unless it is God or dependent on God as its preserving agent.

In the same way, 'A number [of things] exist; therefore, two [things] exist' is valid, but not by the locus from the superior to the inferior, but rather from the integral whole. This is because, necessarily, every number is either two [things] or some part of it is two [things].

As to the point, however, that was argued [concerning the locus] from the subjective part to its whole, it is obvious that the consequences adduced are not valid. For the verbs 'begins' and 'differs' imply negations that distribute the terms 'white' and 'colored', as well as the terms 'donkey' and 'animal', whereas the locus from the distributed inferior to the distributed superior is not valid.

6.4.4 The loci from the integral whole and its part

(1) An integral whole [*totum integrale*], according to our author, is described thus: an integral whole is what is composed of parts having some quantity [*quod componitur ex partibus quantitatem habentibus*],[38] as a house [is composed of] the walls, the roof, and the foundation. (2) The locus from the integral whole is [the whole's] relation to its part, and the locus from the part of the integral whole is [the part's] relation to its integral whole. (3) The locus from the integral whole is valid only constructively, as follows: 'The house is; therefore, the wall is'; the relevant maxim is 'If

37. Namely, in the miracle of the Holy Eucharist, where, as a result of transubstantiation, the accidents of bread and wine exist without inhering in any substance, sustained directly by divine power.

38. See *totum integrale est quod est compositum ex partibus habentibus quantitatem* in Peter of Spain, *Tractatus, called afterwards Summule logicales,* intro. L. M. de Rijk (Assen: van Gorcum, 1972), p. 64.

the whole is posited, its part is posited'. (4) The locus from the part of the integral whole is valid only destructively, for example: 'The wall is not; therefore, the house is not'; the relevant maxim is 'If a part of the integral whole is removed, its whole is also removed'.[39]

The fourth part is about the integral whole and its part. And it contains four sections: the first describes the integral whole, the second describes the loci from the integral whole and from its part, the third shows how the locus from the integral whole is valid, and the fourth shows the same concerning the locus from the part.

Concerning the first section we should note that Boethius, describing the integral whole, did not add the clause 'having some quantity' [*secundum quantitatem*],[40] but he says that an entire, or integral, whole is one that consists of several parts. And this greatly differs from a universal whole, for the universal whole does not consist of its parts, indeed, it can exist without them, as the term 'animal' without the term 'man', 'donkey', etc., whether in the mind (if we are talking about a mental universal) or whether in utterance (if we are talking about the spoken universal); but it is not possible for an integral whole to exist without its parts, since it has to consist of its parts.

And clearly Boethius is in agreement on this point with Aristotle in bk. 5 of the *Metaphysics;* for both of them, leaving aside 'whole' in the sense in which it signifies the same as 'perfect', since that is irrelevant here, posited only two principal modes of 'whole', namely, 'universal whole' and 'integral whole'. Boethius says: "Something is usually said to be a 'whole' in two senses, either as a genus, or as something complete that consists of several parts."[41] And Aristotle says: "A whole is that which contains those that are contained, so that they are some one thing; and this in two ways, for either so that each one of them is one, or so that that which is [constituted] from them is one"; and he meant to say that the whole has to be something one, as he says, "insofar as it is some totality,"[42] and it is also necessary that the whole contain several things, which are its parts, and those several things also have to be or have to be said to be that one. And this can happen in two ways: either so that

39. For the proper interpretation of the terminology of a term's being "posited" or "removed" see Buridan's own explanation on p. 429.

40. The text is somewhat incoherent here, in that it does not quote exactly the clause of the main text to which it refers. The point, nevertheless, is the same. See n. 41.

41. See Boethius, *De topicis differentiis,* p. 51, 1188A13–14, and Boethius, *De Divisionibus,* in *The Cambridge Translations of Later Medieval Philosophy,* ed. N. Kretzmann and E. Stump, vol. 1, *Logic and the Philosophy of Language* (New York: Cambridge University Press, 1988), 5a–c, pp. 31–33.

42. Aristotle, *Metaphysics* V.26.1023b27 ff.

each one of those several things is said to be that one thing, i.e., so that the one whole is truly said, i.e., predicated, of each one of them, and this is the universal whole; for, as Aristotle says, the universal whole contains several things because of its being predicated of each one of them.[43] In the other way the situation is such that the one whole is not predicated of any one of those several things but it is [rather made up] from and consists of them; and this is the integral whole, which not only is [made up] *from* its parts, but it also *is* its parts, whereas a universal whole *is not* its parts.

Therefore, it seems to me that in the description of the integral whole we should not append the clause 'having some quantity' [*secundum quantitatem*], but rather we should adhere to the description provided by Boethius. For of every duality some unit is a part, and it is a part only as an integral part and not in any other way, but the units that are the parts of the duality of two angels are only the angels themselves, and [on account of their simplicity] neither of them has any quantity.[44] Similarly, a mental proposition consisting of a simple copula, a simple subject, and a simple predicate is an integral whole of these simple concepts, yet none of these has any quantity. And some people had the opinion that the human intellective soul was substantially and integrally composed of the agent intellect and the potential intellect, although they would not have said that either had some quantity.

Furthermore, from what have been said it is clear that the names 'universal whole' and 'subjective part', or even 'superior' or 'inferior in predication', are names of second intention, or imposition; for they appropriately supposit for predicable and subjectible significative terms. But the terms 'integral whole' and 'integral part' are terms of first intention or imposition, for they aptly supposit for external things, existing apart from the operations of the soul; for a house is an integral whole, as well as a man or a stone, for any of these consists of many parts and is those parts.

But then at once there arises a question. For if I say: 'A house is; therefore, a wall is', how can I say that we have here [an instance of the] locus from the integral whole? For the locus is not named after the things signified by the terms placed in the argument but after the terms themselves embodied in the argument; but as far as the present argument is concerned, the integral whole and its part are external things, namely, the house and the wall; therefore, we

43. Ibid., V.26.1023b2730–32.

44. *Nam cujuslibet binarii pars est unitas, et non aliter pars quam pars integralis, et tamen binarii *intellectarum* [*intelligentiarum*—Desmond Henry] *unitates quae sunt ejus partes non sunt nisi illae intelligentiae* quarum nulla habet quantitatem.* I am grateful to Desmond Henry for finding out exactly how the Hubien text was corrupted here and that, accordingly, this has to be the correct translation.

should not say that we have here [a case of the] locus from the integral whole to its part.

I reply that this customary manner of speaking is without a doubt improper. And it needs to be expounded as follows: 'from the integral whole to its part', i.e., from the term supposing for the integral whole to a term supposing for the integral part, in accordance with the relation they have to each other, insofar as one supposits for such a whole and the other for its part. And the maxim that says 'If the whole is removed, its part is removed' should also be expounded correspondingly, thus: if the term supposing for the integral whole is removed, then the term supposing for its part is also removed. But by the removal of a term in this context we should understand the nonconstancy of the term, and by the positing of a term the constancy of the term, in the way logicians talk about the constancy and nonconstancy of terms, namely, that we say that a term has constancy if it supposits for something and nonconstancy if it supposits for nothing. But we signify that a term has constancy, and that it supposits for something, when we affirm of it the verb 'is' absolutely [*'est' secundum adiacens*][45] and that it has nonconstancy when we deny of it this verb. Therefore, the aforementioned maxims, namely, 'If the integral whole is posited, its part is also posited' and 'If the integral part is removed, its whole is also removed', are also to be granted only when the argument proceeds from the premise to the conclusion with 'is' absolutely. And it is laid down that these loci are not valid with another verb or predicate. So, when I give the maxim 'If the integral whole is posited, its part is also posited', its sense, insofar as it is a logical maxim, is this: 'If the term apt to supposit for the integral whole has constancy, i.e., if it supposits for something or some things, then the term apt to supposit for the integral part of this whole also has constancy in the said manner'. Similarly, 'If the integral part is removed, its whole is also removed' becomes 'If the term apt to supposit for the integral part does not supposit for anything, then the term apt to supposit for its integral whole does not supposit for anything'. And the same can be expressed equivalently in fewer words, so that the maxims are formulated thus: 'If the verb 'is' is truly affirmed of the name apt to supposit for the integral whole, then so too it is affirmed of the name apt to supposit for the part' and 'If that verb is truly denied of the name of the part, then so too it is denied of the name of the whole'.

But then there arise some questions concerning these loci. The first is whether the locus is valid from every integral whole to any part of it con-

45. That is, when 'is' is predicated as an absolute predicate, without the addition of another term, as in 'Socrates is', as opposed to 'Socrates is wise', where 'is' functions not as an absolute predicate, but as the copula.

structively but not destructively when the word 'is' occurs absolutely, and, conversely, from the part to the whole, in which case it is valid destructively but not constructively. The second question is whether the loci from the integral whole to its part and conversely are valid only with the verb or predicate 'is', or whether they are also valid with other verbs or predicates, and if so, whether with all, or with some but not all, and if the latter, we have to see with which ones they are valid and with which ones they are not, and why.

Now it is not easy to give good answers to these questions. Concerning the first question we argue that from the whole to the part the inference is not valid constructively. For although a finger or a hand is an integral part of a man, yet this is not valid: 'A man is; therefore, a finger (or a hand) is', for a man would still exist even if his hands were cut off. And likewise the inference is not valid from the part to the whole negatively, for the maxim 'If the integral part is removed, then the whole is removed' is not true, because the man's hands can be removed while the man remains. Indeed, it looks as though these loci are valid just the other way around than was declared, namely, it seems that from the whole to the part it is valid negatively and in the other way affirmatively. For this is valid: 'A foot is; therefore, an animal is', and, conversely, 'An animal is not; therefore, a foot is not'. I prove the first consequence: if a foot is, I ask whether it is animated by a sensitive soul or not. If it is animated by a sensitive soul, then it follows that it is [the foot of] an animal, whence it follows that an animal is. But if you say that it is not animated by a sensitive soul, then it follows that it is not a foot, which contradicts the assumption. And this last consequence is obvious, for if it is not animated by a sensitive soul, then it cannot have the natural operation of a foot; therefore, it is not a foot, except equivocally, as if it were made of stone. This answer is the one given by Aristotle, in bk. 4 of *Meteorology:* "A thing is defined by its operation, for those that are able to perform their operation really are what they are called, as an eye, for example, when it can see, but that which cannot [perform its operation] is so-called only equivocally, as a dead eye or one made of marble."[46] And he gives the same answer in bk. 7 of the *Metaphysics,* when concerning the parts of animals he says: "For if a part of each were defined, it would not correctly be defined without [reference to] its operation, which would not exist without the sense[s]"; and then, a little bit later he adds: "For they (namely, various parts of animals) cannot even exist sepa-

46. Aristotle, *Meteorology* IV.12.390a10–14. In E. W. Webster's translation (based on the Greek text) it is as follows: "What a thing is is always determined by its function: a thing really is itself when it can perform its function; an eye, for instance, when it can see. When a thing cannot do so it is that thing only in name, like a dead eye or one made of stone, just as a wooden saw is no more a saw than one in a picture."

rately, for a finger is not a part of an animal regardless of how it is, for it is a finger only equivocally if it is dead."[47] Furthermore, once we have conceded the consequence 'A foot is; therefore, an animal is', we have to concede the other, namely, 'An animal is not; therefore, a foot is not', for this is to argue from the opposite of the consequent of the first consequence to the opposite of the antecedent. Therefore, if one of these consequences is valid, the other has to be valid too, or if one of these consequences is true, the other has to be true too.

Again, if I argue thus: 'A wall is; therefore, a house is', I ask whether the wall is a part of a house or not. If you say that it is, then it follows that a house is; for every part is [a part] only of some being. But if you say that the wall is not a part of the house, then the argument is not from the part of the integral whole to its whole. Therefore, if it was an argument from the part of the integral whole to its whole, then it is necessary that if the antecedent is true, then the consequent is true.

Again, in particular, we argue from homogeneous wholes: water is an integral whole of its quantitative parts, and yet if we take any of these parts and call it 'B', the affirmative consequence from the name 'B' would be valid to the name 'water', for B is water, since in such cases the parts are of the same nature [*ratio*] as the whole and the other parts.

For the solution of these doubts we should note some points. First, there are two kinds of parts of integral wholes: some are called 'principal parts', and they are ones that are necessary for the being of the thing signified by the name of the whole, as both body and soul for the being of a horse, or indeed flesh and bone and head and heart and others of this kind, and in a house the walls, roof, and foundation; others are called 'nonprincipal parts', for they are not necessary for the being of the thing, although they are useful or necessary for its well-being or perfect being, or for ornament, as in a horse the ears, the eyes, the legs, and in a house the fireplace, the pantry, the kitchen, the vault, the glass in the windows, and the like. Now, then, I declare that the locus from the whole to a principal part with the verb 'is' as an absolute predicate is valid affirmatively, and likewise, [the locus] from such a part to the whole [is valid] negatively, as has been said, but it is not valid in this way from the whole to a nonprincipal part and conversely.

Second, we should note that if sometimes the consequence from the integral whole to its part seems to be valid negatively, and in the other direction affirmatively, then that consequence is not valid on account of the relation ac-

47. Aristotle, *Metaphysics* VII.10.1035b17–18, 23–25; cf. Aristotle, *On the Soul* II.1.412b20–22; J. Zupko, "How Are Souls Related to Bodies? A Study of John Buridan," *Review of Metaphysics* 46 (1993): 575–601.

cording to which one is called an integral whole and the other its part, but on account of some other relation founding some locus, such as that of the cause to its effect or conversely. For it is possible that such diverse relations coincide in the same terms. For example, this is valid: 'A foot is; therefore, an animal is', but this does not hold because the name 'foot' signifies a part and the name 'animal' signifies a whole but rather because the name 'animal' signifies a necessary cause for the existence of the foot; for the animal is a necessary cause for the existence of the foot, and if [that cause is] not the whole animal of itself, then it is, nevertheless, by virtue of its principal part, namely, the sensitive soul; therefore, this is valid: 'A foot is; therefore, a sensitive soul is inherent in a body', and the locus is from the effect to the cause; and then this is also valid: 'A sensitive soul is inherent in a body; therefore, an animal is', by the locus from the formal cause to its effect; therefore, arguing from the first to the last, this is valid: 'A foot is; therefore, an animal is'; and it is not valid on the basis of the relation on account of which the foot is said to be an integral part of the animal, and the animal its integral whole, as has been seen. And it is obvious that in terms of the converse relations this is valid: 'An animal is not; therefore, a foot is not' And thus the first problem is solved.

As to the second question it is obvious that with respect to several predicates the consequence [from the whole to the part] is not valid affirmatively. For these are not valid: 'A house costs one hundred dollars; therefore, a wall costs one hundred dollars',[48] 'A man is seven feet tall; therefore, a heart is seven feet tall', or 'A man is white; therefore, a heart is white'. Likewise, such a consequence is not valid with every predicate negatively, for example, 'A man is not in a subject; therefore, a soul is not in a subject', 'A man is not the first act of a physical body; therefore, neither is a soul', 'A man is not a part of an animal; therefore, neither is a heart, nor a head', etc. And thus it is clear that, conversely, from the part to the whole, it is not valid with every predicate, for if it were valid from the part to the whole affirmatively, it would have to be valid from the whole to the part negatively, and if it were valid from the part to the whole negatively, it would be valid the other way affirmatively, because if a consequence is valid, then the consequence from the opposite of the consequent to the opposite of the antecedent also has to be valid.

And it is also clear that Boethius concedes that the locus from the integral parts or integral part is valid affirmatively even with predicates other than 'is' as an absolute predicate. For he gives an example by arguing to the conclusion 'Medicine is useful' or 'Socrates is set free'. But I do not claim that we should seek the verification of those examples in the strict sense, nor is it easy for me

48. Buridan's actual currency here is pound *(libra),* but that does not really matter as far as his point is concerned.

to make that claim, for with some predicates other than 'is' (apart from those following from it),[49] these loci are valid on account of the relation according to which one thing is said to be a whole and the other a part, although in the case of many parts and wholes they are valid on account of other, coincidental relations, as has been noted above.

Concerning the other question we should note that an argument from the whole to the part, such as 'A house is; therefore, a wall is', does not have to presuppose that the wall is part of the house or that the house is a whole with respect to the wall. On the basis of that assumption, the conclusion should be inferred and conceded at once, without any further argument. For this is valid: 'A wall is a part of a house; therefore, a wall is and a house is'. Yet, on the other hand it would seem that we do have to presuppose this, for the maxim that confirms the argument, namely, 'If we posit the whole, its part is also posited', does not seem to be relevant, nor does it confirm the argument, except on the assumption that the house and the wall are related to each other as whole and part. I state, therefore, that we had here a locus from a name signifying a whole to a name signifying a part, as was apparent; and this has indeed to be assumed, for the name 'house' is apt to supposit for certain integral wholes and the name 'wall' is properly apt to supposit for things that are apt to be principal parts of those wholes. Therefore, the sense of the maxim is that if the thing for which a name signifying some integral wholes is apt to supposit exists, then the thing for which a name signifying the principal parts of these wholes is apt to supposit also exists.

To the final question I reply that the relation of the locus [*habitudo localis*] and argument itself should proceed from some term to some other term and not from the same to the same, for then we would not prove anything but rather beg the question. But since for an argument to exist it is required that it prove something, it is not an argument if we say 'Water is; therefore, water is', even though the antecedent supposits for a part and the consequent for the whole; rather, the name of the part has to be different from the name of the whole. Let us assume, therefore, that besides the name 'water', which is common to the whole and to the part, we impose proper names on the whole and the part, so that this water is called A and a half of it is called B; then it certainly does not follow that 'B is; therefore, A is'; but from the proper name of the part or from the proper name of the whole to the common name of the part and whole the argument is valid, for example: 'B is; therefore, water is' or even 'A is; therefore, water is'; this, however, is not the locus from the inte-

49. *Nisi consequenter ad illud.* This is a rather puzzling insertion. Unless the text is corrupt here, this phrase may refer to predicates entailed by 'is', such as 'being', 'thing', and 'something'.

gral part to its whole but from the subjective part to its whole; for in the given case the name 'water' would be a universal whole with respect to the names 'A' and 'B', as is a species to its individuals.

Finally, we should note that some people say that in heterogeneous things the locus from the affirmation of the whole's name of some subject to the negation of the part's name of the same subject is valid, and, likewise, so is the locus from the affirmation of the part's name of some subject to the negation of the whole's name of the same subject; for example: 'A is a house; therefore; A is not a wall', or 'A is a head; therefore, A is not a horse'. And I take it that this is so on account of the disparateness of those names; or at any rate it is not unacceptable if the name 'integral whole', just like the name 'cause', is divided into its various distinct species, or diverse modes, so that there are diverse modes of the consequences from the diverse species of wholes and their corresponding parts, not insofar as it goes from the integral whole to its part but insofar as it goes from such and such a sort of whole to its such and such a sort of part. Therefore, if I say: 'A is a house; therefore, A is not a wall', the locus is not from the integral whole insofar as it goes from the integral whole to its part but insofar as it goes from the heterogeneous whole to its heterogeneous part; and then it appears to me to be certain that it is this heterogeneity that is a sort of ground for the diversity or disparateness and that this constitutes an extrinsic locus.

6.4.5 The loci from the whole-in-quantity and its part or parts

A whole-in-quantity is a universal taken universally, as in 'every man' and 'no man'. For the name 'man' is some universal that is taken universally by the addition of the universal signs 'every' and 'no'. A part in quantity is a term contained under such a distributed universal, as when the terms 'Socrates' and 'Plato' are parts in quantity of the terms 'every man' and 'no man'. The locus from the whole-in-quantity is [the whole's] relation to its part; the locus from the parts in quantity is [the parts'] relation to their whole. The locus from the whole-in-quantity holds constructively and destructively. [It holds] constructively [as follows]: 'Every man runs; therefore, Socrates runs'; maxim: Whatever is truly affirmed of the whole-in-quantity is also truly affirmed of any of its parts. [It holds] destructively [as follows]: 'No man runs; therefore,

> Socrates does not run'; maxim: Whatever is truly removed of the whole-in-quantity is also truly removed from any of its parts. The locus from the parts of a quantitative whole holds constructively and destructively if all its parts are enumerated, but otherwise it does not. [It holds] constructively [as follows]: 'Socrates runs and Plato runs, and so on for the others; therefore, every man runs'; [it holds] destructively [as follows]: 'Socrates does not run, and Plato does not run, and so on for the others; therefore, no man runs'.

The fifth part is about the loci from the whole-in-quantity and its parts. And I wish that authors had never posited this locus, for in fact this is nothing but the locus from an inferior to a superior. So if I say 'Every man runs', it is not true to say that the predicate 'runs' is predicated of the whole [phrase] 'every man' but only of the term 'man', though the latter is distributed, for the subject of this proposition is only the term 'man' and not the whole [phrase] 'every man'. Therefore, it is immediately clear that the maxim 'Whatever is predicated of the whole-in-quantity is also predicated of any of its parts' is false, for nothing is predicated of the whole [phrase] 'every man' in saying 'Every man runs'. And if you say that we should not understand this in such a way that it is the whole [phrase] 'every man' that is the whole-in-quantity, but rather in such a way that this applies only to the term 'man', although it is distributed, then of course I would concede that it could be called that. And then it is clear that there is no locus here except the one from the universal whole to its part, which is valid if the whole is distributed and not otherwise. From the subjective part to its nondistributed whole [the consequence] is valid in the way described elsewhere, but to the same distributed it is not valid. From the sufficiently enumerated subjective parts to their distributed whole, however, it is valid.

And I believe that it was not Boethius's intention to distinguish this locus from the locus from the universal whole but only to say that sometimes there is a locus from the universal whole universally quantified [*a toto universali universaliter quantificato*] and that then it is valid to its part both constructively and destructively, and that it would not be valid if it were not thus quantified. Therefore, as has been maintained from the start, Aristotle and Boethius posited only two principal wholes distinct from each other, namely, the universal whole and the integral whole. And if there are counterinstances to be brought against those loci, then those pertain to the sophisms concerning universal signs.

6.4.6 The loci from the whole-in-mode and its parts

A whole-in-mode is a common term taken without any determination, as in 'A man runs', 'A donkey walks'; a part-in-mode is the same common term taken with some determination, as in 'white man', 'Socrates' donkey', 'runs fast', 'walks gracefully'. The locus from the whole-in-mode is [the whole's] relation to its part and the locus from the part-in-mode is [the part's] relation to its whole. The locus from the whole-in-mode holds destructively, as in 'A stone is not a man; therefore, a stone is not a white man'; maxim: From whatever the whole-in-mode is removed, from that any part of it is also removed. The locus from the part-in-mode holds constructively, whether the part is the subject or the predicate. And I say that it is the predicate, as in 'Socrates is a white man; therefore, Socrates is a man'; maxim: Of whatever the part-in-mode is predicated, of that its whole is also predicated. And I say 'whether it is the subject', as in: 'A white man runs; therefore, a man runs'; maxim: Whatever is predicated of the part-in-mode is also predicated of its whole.

The sixth part is about the loci from the whole-in-mode and its part. Concerning this we should note that in fact the locus from the whole-in-mode to its part is contained under the locus from a superior to an inferior. For a common term taken absolutely is superior to itself restricted by an added determination; therefore, the whole-in-mode is predicated universally of its part, and not conversely, for every white man is a man, but not every man is a white man. Therefore, this locus holds, as does the locus from the universal whole to its part or the locus from the superior to the inferior. Therefore, this locus is valid if the whole-in-mode is distributed, whether affirmatively, or negatively. I say "negatively," as has been shown in the example, and I say "affirmatively," as in 'Every man runs; therefore, every white man runs'. But when we argue affirmatively in this manner, we have to assume the constancy of the part-in-mode. If the part-in-mode were not distributed, however, the consequence would not be valid.

Furthermore, the locus from the part-in-mode to its whole holds just as does the locus from the inferior to the superior. For it is not valid to the distributed whole-in-mode; therefore, this consequence is not valid: 'Socrates is not a white man; therefore, Socrates is not a man'. But it is valid to the non-distributed whole-in-mode, whether affirmatively or negatively. But in the negative argument we have to assume the constancy of the subject. For example, consider 'A white man is not risible; therefore, a man is not risible';

here the consequence would not be valid if no man were white, for then the antecedent would be true and the consequent false.

And all these behave in the same way as they did in the cases of the loci from the superior to the inferior and conversely. But there are some objections to these loci. For this is not valid: 'Caesar is a dead man; therefore, Caesar is a man', 'An Ethiopian is white with respect to his teeth; therefore, an Ethiopian is white','Antichrist is thinkable [*opinabile*]; therefore, Antichrist is', 'Socrates is willing to lose his donkey for ten dollars; therefore, he is willing to lose his donkey', or even 'I make a man to be educated; therefore, I make a man to be'.

To the first three objections we should say that sometimes a term added as a determination to a common term is not strictly speaking a determination but rather it is an ampliation, as when I say 'a thinkable being'; and in such cases these consequences are not valid. In general, if an added term makes the common term supposit for something for which it would not supposit without the addition, these consequences are not valid. For the term taken absolutely is not superior to itself taken together with the addition. For it is not the case that every dead man is a man, nor that every thinkable being is a being, nor that everyone who is white with respect to his teeth is white.

To the fourth objection we reply in the same way. For the addition 'for ten dollars' makes that to which it is added, namely, the expression '[someone who] is willing to lose his donkey', supposit for someone for whom it would not supposit in the absence of this addition. Indeed, losing a donkey for ten dollars does not, strictly speaking, amount to losing it, but it is rather like selling it for ten dollars.

To the fifth objection one might again reply in the same way that the term 'educated' added to the complex [phrase] '[someone] making a man to be' makes it supposit for something for which it would not supposit without the addition. And the defect in the consequence derives from the fact that the verb 'make' construed with [its object in] the accusative [case], which follows it, connotes a certain negation; for this is valid: 'He makes a man; therefore, as a result of his action, what [*quod*] was not a man will be a man', and likewise 'He makes a white man; therefore, as a result of his action someone who [*qui*] was not a white man will be a white man'. Since, therefore, the objection involved the consequence '. . . was not a white man; therefore, . . . was not a man', which was therein said to be invalid, we have to grant that the objection is valid when it claims that it does not follow that because I make a man to be educated, I therefore, make a man to be; but this does not go against what was settled in the foregoing discussion.

Finally, one may have doubts because it is not clear that the term 'man' should be said to be a whole-in-mode with respect to the term 'white man',

but rather it seems that it should be said to be without a mode, for a mode is nothing but an appended determination or one that can be appended, and the term 'man' is without such a determination. Also, it will be asked in what sense of 'being in' [a part] is in such a whole.[50]

The reply is that in this context we use names as we please [*ad placitum*]. And in this case the authors meant to convey by the utterance 'whole-in-mode' nothing but what we understand by the utterance 'modifiable (i.e., determinable) term, taken without a determination', and by 'part-in-mode' they mean the same as 'determinable term taken with a determination'; therefore, that the one *is in* the other is not taken in a strict sense here.

6.4.7 The loci from the whole-in-place and its part

A whole-in-place is a word covering every place, as does 'everywhere' or 'nowhere', and a part in place is a word covering some but not every place, as 'here', 'over here', in the house', etc. The locus from a whole-in-place is [the whole's] relation to its part. It holds constructively, as in 'God is everywhere; therefore, God is here', or 'Antichrist is nowhere; therefore, Antichrist is not here'. The locus from the part of the whole-in-place is [the part's] relation to its whole. It holds destructively, as in 'Caesar is not here; therefore, Caesar is not everywhere'.

The seventh part is about the loci from the whole-in-place and from its part. And concerning this we should note that in fact the locus from the whole-in-place does not differ from the whole-in-quantity, and, consequently, it does not differ from the locus from the universal whole. For to say 'everywhere' amounts to the same as to say 'in every place', and to say 'nowhere' is to say 'in no place', and to say 'here' is to say 'in this place'. And it is clear that 'in every place . . . ; therefore, here . . .' or 'in no place . . . ; therefore, not here . . .' would only be [cases of] the locus from the whole-in-quantity. Therefore, whatever we said about the loci from the whole-in-quantity and from its part or parts will be applicable to these loci analogously. For the locus from the whole-in-place is contained under the locus from the whole-in-quantity, even as the

50. I have translated this sentence in accordance with a conjectural emendation I made on the basis of the end of the next paragraph.

distribution of a common locational term is subsumed under the distribution of a common term.

6.4.8 The loci from the whole-in-time and its part

> A whole-in-time is a word covering every time, such as 'always' or 'never'; a part in time is a word covering every time but not universally, such as 'now', 'today', 'yesterday'. The locus from the whole-in-time is [the whole's] relation to its part, and the locus from the part in time is [the part's] relation to its whole. The loci from the whole-in-time and from its part hold analogously, as do the locus from the whole-in-place and that from its part, as in 'God always was; therefore, God was yesterday', 'Antichrist never was; therefore, today Antichrist was not', 'Today Caesar is not; therefore, Caesar is not always'.

The eighth part is about the locus from the whole-in-time and that from its part. And we should say the same about the locus from the whole-in-time as what we have said about the whole-in-place, namely, that it is subsumed under the locus from quantity. For 'always' and 'at every time', or 'never' and 'at no time', are equivalent.

On these grounds I do not believe that Boethius's intention was to posit these loci—namely, the loci from the whole-in-quantity, from the whole-in-mode, from the whole-in-place, and from the whole-in-time—as distinct from the locus from the superior to the inferior, but that he wanted to say that the locus from the superior to the inferior does not occur only where the inferior comes essentially under the superior, but also where it comes under it on account of some accidental difference, which the author calls a 'mode'. And it does not only hold without the distribution of the superior, but also with the distribution that he calls 'whole-in-quantity', and it does not only hold where there is distribution of the main subject, but also where there is distribution of the circumstances and oblique terms. And this is what Boethius wanted to express by the [following] words: "One can take whole and parts into account not only in substances, but also in mode, times, quantities, [and place]."[51]

51. Boethius, *De topicis differentiis,* p. 52, 1188D27–28.

6.4.9 The description and division of loci from cause and effect

(1) A cause is that from the being of which there follows something else, namely, the effect. (2) And it is divided into efficient, material, formal, and final cause. (3) The locus from the cause is [the cause's] relation to its effect; the locus from the effect is [the effect's] relation to its cause. Likewise, in particular, the locus from the efficient cause is the relation of the efficient cause to its effect, and the locus from the effect of the efficient cause is [the effect's] relation to its efficient cause, and so forth with the other causes and effects.

The ninth part provides, first, the description of cause, second, the division of causes into the four genera of causes, and third, the descriptions of loci from causes and from caused things, in general as well as in particular. And the third section is obvious by analogy to the foregoing discussion.

The division of causes and the four genera of causes should be clarified in [the commentary on] bk. 2 of the *Physics* or bk. 5 of the *Metaphysics*.[52] But when in the description of the name 'cause' it is said that a cause is that from the being of which there follows something else, we should not understand by 'follows' the consequence of the conclusion from the premise or premises, but that the cause is naturally prior to its effect or that the effect should occur by means of the cause or for the sake of it.

But we should still note that where these loci from causes or effects are concerned, the names 'cause' and 'effect' are names of first intention, or imposition, as has been remarked concerning the integral whole and its parts. Therefore, if I say, 'The builder is good; therefore, the building is good', it is not asserted here in a proper sense that we have a [case of the] locus from the efficient cause to its effect, but rather that from a name supposing for an efficient cause to a name supposing for its effect in accordance with their relationship, insofar as one supposits for the cause and the other for the effect. And 'generation' and 'corruption' will have to be understood in the same way [in the corresponding loci]. Also the maxims, if they are to be logical maxims, should be expounded in the same way. For example, 'If the efficient cause is good, then its effect is good' is expounded as, "If the predicate 'good' is truly affirmed of the name of the efficient cause, then it is also truly affirmed of the name of the effect."

52. Aristotle, *Metaphysics* V.2.1013a24 ff; Aristotle, *Physics* II.3.1946a24, II.7.98a24; Buridan, *Quaestiones in Aristotelis Metaphysicam,* bk. 5, q. 1.

6.4.10 The loci from the efficient cause and its effect

> An efficient cause is what moves and makes the thing to be, as the builder makes the house to be. The locus from the efficient cause to its effect holds with respect to the predicates 'good' and 'bad' both constructively and destructively. I say 'constructively,' as in 'The builder is good; therefore, the house is good'; maxim: 'If the efficient cause is good, then its effect is good'; 'destructively,' as in 'The builder is not good; therefore, the house is not good'; maxim: 'If the efficient cause is not good, then its effect is not good'. Arguing in the other direction we would have the locus from the effect of the efficient cause to its cause, and it holds constructively and destructively. And all points should be made analogously to those that have been made concerning the locus from the efficient cause.

The tenth part is about the loci from the efficient cause and from its effect, i.e., from the names suppositing for efficient causes to the names suppositing for their effects.

These [loci] give rise to many doubts. For it does not follow that if the house is good, then the builder is good, indeed, perhaps, he is a murderer, a bandit, or a thief. Again, since crafts and applied sciences [can produce either of two] opposites, as is clear from bk. 9 of the *Metaphysics,*[53] it is obvious that a good craftsman would know how to make, and could make, some bad artifact; therefore, it does not follow that if the craftsman is good, then the artifact is good. Perhaps the matter of the house is so bad that no good house can be made of it, however good the builder is. Perhaps the house is so old that it is in ruins and it is bad, although [its] builder was very good. Again, although the house remains in existence, perhaps its builder is dead; therefore, he is not good; hence it does not follow that the house is good and therefore the builder is good. Again, I posit that a very good builder will make a house; that house does not [yet] exist, for what will be made does not [yet] exist, as is stated in bk. 1 of *On Interpretation;*[54] therefore, it does not follow that if the builder is good, then the house is good, for in this case, as is clear to anyone who carefully considers it, it can obviously be seen that the antecedent can be true although the consequent is false. Someone unfamiliar with these loci may wonder whether the loci from the efficient cause to its effect, and conversely, hold with respect to predicates other than the predicates 'good' and 'bad'.

53. Aristotle, *Metaphysics* IX.2.1046b.

54. Aristotle, *On Interpretation* I.7.17b33.

To the first objection[55] we should reply that here we do not deal with moral goodness or badness, nor even with the goodness or badness of nature, but with the goodness or badness of the craftsmanship of the craftsman, so that we call a craftsman good if he is perfect in his craft, and we call him bad if he is inadequate or inexperienced in his craft. And we call the effect good if it is made usefully for the purpose for which it is designed, insofar as it is called such-and-such a sort of artifact. And it does not appear to me at all that in connection with these examples and maxims we should confine ourselves to artificial agents and products in particular. On the contrary, this locus can be extended to natural things, for sometimes from the perfection of the agent the perfection of the effect follows, if there is no impediment; and the lesser perfection of the agent produces a less perfect effect, unless some other agent concurs, perfecting and complementing the effect. And, therefore, as far as natural perfections or defects are concerned, this locus is indeed valid, as when the father is big, strong, handsome, refined, and of a good constitution, it follows that so likewise is the son, and if [the father is] not, then [the son] is not, unless this opposite resulted from some impediment or indisposition of nature.

And there are many circumstances that one has to take into consideration in connection with these loci. Therefore, these loci applied to such cases should not be taken to be necessary, for it is enough if they are probable or persuasive.

Again, we should note well that when we say 'The house is good; therefore, the builder is or was good', the consequence in the strict sense is neither valid nor probable but sophistic, for to say 'This builder is good' is not the same as to say 'This is a good builder'; we shall discuss this in the *Sophismata*.[56] Therefore, we should argue thus: '[There] is a good house; therefore, [there] is or was a good builder', so that the term 'good' is the qualification of the builder [*determinatio domificatoris*] not on account of his nature but on account of his craftsmanship or of the artifact.

To the second objection we reply that concerning the arts the rule and the locus hold on the assumption that the craftsman works as well as he can to

55. Buridan's word here is *instantia.* What justifies the translation is that the role of the counterinstances with respect to the general rule listed earlier was to object to the validity of the general rule, and here and in what follows Buridan replies to these objections by showing how these counterinstances do not absolutely invalidate the general rule.

56. Sophismata, chap. 4, 2d pt., "On the appellation of appellative terms." The point is that in 'This builder is good' the adjective 'good' is the whole predicate, which expresses a qualification of the human person who happens to be a builder and not a qualification of his craft, whereas in 'This is a good builder' the adjective 'good' is a part of the complex predicate, in which it qualifies the craft of the builder appellated by this predicate.

reach the best result that such an artifact is generally designed for and that he puts into this his best effort; otherwise the argument would not be valid.

To the third objection we should reply that the rule and the locus assume that the matter is not inadequate and that there is no impediment, as has been said. Therefore, even if the house is a ruin because it is old, this is irrelevant to the goodness of the craft or to that of the artifact, insofar as it is called an artifact; this is so because it is made of natural matter.

To the fourth and fifth objections one may reply that, with respect to the way in which the examples and maxims have been given, this locus holds only with the assumption of the constancy of terms, namely, that the efficient cause remains such as it was when it produced the effect, and that also the effect remains such as it was when it was produced by the efficient [cause]. I say 'such' with reference to the aforesaid goodness and badness. Or again, as others assert, if the consequence proceeds from the name of the actually (and not merely potentially) acting cause, as is the case with the name '[someone] who is building' [*domificans*], then the consequence should proceed from the verb 'is' to the verb 'will be', if we proceed from the cause to the effect, or from the verb 'is' to the verb 'was' if we proceed from the effect to the cause, as in 'The builder is good; therefore, the house will be good', or 'The house is good; therefore, the builder was good'; however, we expound it here in accordance with what has been previously stated, namely, 'The builder is a good builder; therefore, the house will be a good house'.

Concerning the last question we should say that these loci are not valid for many predicates; for example, if the builder is white, it does not follow that the house is white, or again if the builder is a man, it does not follow that the house is a man. Rather, the consequence is valid, according to Aristotle, from making to being made and conversely, and from acting to being acted upon and conversely, as in 'The agent is acting; therefore, the receiver of action is receiving action' 'What can be acted on is being acted on; therefore, the agent is acting', or 'The builder is building; therefore, the building is being built'. For, as Aristotle says, the actual causes and the actual effects exist or do not exist at the same time.[57] Indeed, the consequence is valid from possibility, for if something can heat, then something can be heated, and conversely; and thus it is also valid from actuality to possibility, as in 'A builder is; therefore, a house can be', and from present to past, as in 'A house is; therefore, a builder was'.

57. Aristotle, *Physics* II.3.195b17.

6.4.11 The loci from the material cause and its effect

> Matter is that from which, as from something presupposed, something comes to be, as a knife from iron or bread from flour. There are two kinds of matter, namely, permanent and transient. Permanent matter is that which remains under its own name along with the thing that was made of it, as iron is the matter of a knife; transient matter is that which does not thus remain, as flour and water do not remain [flour and water] in bread. The locus from the material cause, be this permanent or transient, holds constructively from the verb 'is' to the verb 'can [be]', as in 'There is iron; therefore, there can be a knife'; 'There is water and flour; therefore, there can be bread'; maxim: 'If the material cause is posited, its effect can be posited'. Again, it holds negatively, if present and past [existence] are both denied, as in 'There neither is nor was either water or flour; therefore, there is no bread'. Again, it holds destructively in terms of the verb 'is' and with respect to permanent matter, as in 'There is no iron; therefore, there is no knife'; but it does not hold in this way with respect to transient matter, for this is not valid: 'There is neither water nor flour; therefore, there is no bread'. The locus proceeding from the effect of the material cause to its cause holds constructively from actual existence to actual existence [*de esse ad esse*] concerning permanent matter and from actual existence to past existence [*de esse ad fuisse*] concerning transient matter, whereas it holds destructively from potential existence to actual existence [*a posse esse ad esse*]. And we may give examples of each: 'There is a knife; therefore, there is iron', 'There is bread; therefore, there was water and flour', 'There cannot be bread; therefore, there is no flour and water'.

The eleventh part is about the loci from the material cause and from its effect, and the whole [passage] is clear. For, since the nature of matter is of the nature of potency, and since matter does not determine some act by itself, from the existence of matter there does not follow the existence of its effect but only its possible existence. Since a thing cannot come to be naturally without some preexisting matter, however, the existence of the effect entails the present or at least the past existence of matter.

We should note that the matter that we call 'transient' is not properly the matter of the effect in which it does not remain, but it is composed of matter and a form contrary to or incompatible with the subsequent effect, as when water becomes air, water is said to be the transient matter of air. For it goes away [*transit*], since it perishes, and this because the form of water is incompatible with the form of air; however, it is called the matter of air, since the

same matter that was under the form of water comes to be under the form of air and truly remains within the air.

6.4.12 The loci from the formal cause and its effect

A form is what gives being to a thing, as when whiteness gives being to the white thing. The locus from the formal cause holds constructively and destructively with respect to the verb 'is' as an absolute predicate, as in '[A] whiteness is; therefore, a white thing is'; maxim: 'If the formal cause is posited, then its effect is posited'; likewise, '[A] whiteness is not; therefore, a white thing is not'; maxim: 'If the formal cause is removed, its effect is removed'. The locus from the effect of the formal cause to the formal cause holds in a similar fashion and also does so conversely, both constructively and destructively, as in 'A white thing is; therefore, a whiteness is', 'A white thing is not; therefore, a whiteness is not'.

The twelfth part concerns the loci from the formal cause and from its effect. The effect of a formal cause is the matter or subject in which the form inheres. For, as is stated in bk. 2 of the *Physics*,[58] the causes are causes of each other, whence matter is the cause of form, and form is the cause of matter. Therefore, since we grant that a white thing is the effect of a whiteness and that a whiteness is its formal cause, if that white thing is a man or a stone, it follows that a man or a stone is the formal effect of a whiteness, yet the following is not valid: 'A whiteness is; therefore, a man is', or 'A man is; therefore, a whiteness is'. Therefore, it seems that these loci do not hold in the way stated. Indeed, it is obvious that the maxim was not valid, namely, that if the formal cause is removed, then its effect is removed, for the form, which is the formal cause, can be destroyed while its subject remains, which, however, is its effect.

We should say, therefore, that the locus is not from the formal cause to its effect but from the name suppositing for the formal cause to the name suppositing for its effect, as was said above. But since the same thing can be signified according to different concepts, it is necessary to specify here the names in terms of which these loci are valid. I say, therefore, that the form has to be signified by an abstract name, and the effect, or the subject, of the form has to be signified by a concrete name that is a denominative derived from this abstract name, so that the concrete name supposits for the subject and the ab-

58. Ibid., II.3.195a9–10.

stract name for the form itself. And then the aforementioned consequences will be valid; but if the subject is signified by another name, the consequence need not be valid.

We should also note that on the basis of our faith we posit some special forms to be separable from their subjects without their corruption, as in the case of the intellective human soul, which is not educed from the potentiality of its matter, or its subject.[59] And we did not, and do not, think that these loci are valid for these forms. For by divine power there can be a whiteness by which nothing is white,[60] but this would not happen naturally; therefore, these loci are valid at least on the assumption that no miracle takes place.

Again, we should note that it is not the form but rather the efficient [i.e., the agent] that gives being to the subject; for what makes something white gives whiteness to the subject, and by this it is white. Therefore, the description of 'form' is to be taken in such a way that the form gives being to its subject, i.e., by the advent of the form the subject is actually such or as much as it was previously only in potentiality, or, indeed, if the form is substantial, then by it the substance is *per se* subsisting in actuality as the [thing] that it was previously in potentiality.

6.4.13 The loci from the final cause and its effect

The end [*finis*] is that for the sake of which something else is or comes to be, as for example we acquire virtues for the sake of happiness; therefore, happiness is the end of virtues. The locus from the final cause to its effect holds constructively and destructively with respect to the predicates 'good' and 'bad', as in 'Happiness is good; therefore, moral virtues are good'; maxim: 'Whose end is good is itself good'. Likewise, 'Punishment is bad; therefore, sin is bad'. And you can construct the locus from

59. According to Buridan this position cannot be demonstrated but should be held by faith. See J. Buridan, *Quaestiones De Anima [De prima lectura],* in J. Buridan, *Le traité de l'âme de Jean Buridan (Prima lectura),* ed. B. Patar (Louvain-la-Neuve: Editions de l'Institut Supérieur de Philosophie; Longueil, Editions du Préambule, 1991), bk. 3, q. 3, p. 423, and (ed. Lokert), bk. 3, q. 3, p. 667.

60. According to the common theological doctrine of Buridan's time, although accidents cannot exist outside of their subject naturally, they can be sustained by divine power without their subject supernaturally. This is what happens in the sacrament of the Holy Eucharist, wherein the accidents of bread and wine are sustained without inhering in their subject, which, after the transubstantiation, is no longer there to be informed by them.

the effect of the final cause to its cause in the other direction, and it is easy to exemplify.

The thirteenth part is about the loci from the final cause and from its effect. Now there are great difficulties in physics concerning the final cause, as there also are with the other causes, which are not going to be discussed here.[61] Yet, since an end according to its principal and primary concept is said to be that which preexists the agent and action and everything that is subordinated to it insofar as it is their end (and I say 'preexists' either in time or at least by nature, as we say that God is the final cause of all beings),[62] whereas an end according to its secondary concept is said to be that which does not preexist the agent nor its action but is produced in being or acquired by the agent and by its action, as when the health to be produced in a sick person is said to be the end of the doctor and of everything that the doctor orders to bring about the cure, it is hence clear that we have to speak in one way about the one of these ends and in another way about the other.

For taking 'end' in the first way the consequence from the name of the end to the name of the effect of the final cause is not valid constructively with respect to the verb 'is' since this does not follow: 'God is; therefore, a creature is', and this does not follow either: 'A human soul is; therefore, moral virtue is', although moral virtue exists for the sake of the soul as for the sake of its principal end. But destructively it is valid, for example: 'God is not; therefore, neither is there a creature', or 'A human soul is not; therefore, moral virtue is not'. But from the effect to such a final cause the inference holds constructively and not destructively.

But where the secondary concept of end is concerned (and this is what common people as well as our author in his examples seem to have in mind), the argument from the final cause to its effect is not valid with respect to the verb 'is'. For although a doctor orders some laxative medicine to cure Socrates, this does not follow: 'That laxative medicine is; therefore, Socrates' health is'; nor does it hold conversely. Indeed, of this kind of end Aristotle says that once matter is in the appropriate disposition, the motion stops.[63]

It is true, however, that among the things subordinated to some end, some are such that they need not stay [in existence] when the end is attained (as

61. J. Buridan, *Quaestiones super octo Physicorum libros Aristotelis: Kommentar zur Aristotelischen Physik* (Paris, 1509; reprint, Frankfurt am Main: Minerva, 1964), bk. 5, q. 1.

62. God does not preexist His creatures in time, since God exists eternally, i.e., outside time.

63. That is, when the desired end is reached, the motion leading to that end stops, and hence there is no longer any need for the thing that sustained that motion: once Socrates is cured he no longer needs a laxative, so by that time it may not even exist.

was observed in connection with the laxative medicine), and some are such that they do have to stay [in existence] along with the end to which they are subordinated, as do the virtues along with happiness. And of those that need not stay [in existence] it has been stated that the following inference is not valid: 'This is; therefore, that is'. But where those that have to stay [in existence] along with the end are concerned, the consequence from the end to the effect subordinated to that end is valid affirmatively but not negatively, where the verb 'is' is concerned; and conversely, in the movement from the effect to the cause, it is valid negatively but not affirmatively. For example, this is valid: 'A man's happiness is; therefore, [his] virtue is', but not conversely.

From what has been said it is clear how the author's recommendations concerning 'good' and 'bad' need to be modified. For, since that which does not exist is neither good nor bad, this does not follow: 'Socrates' health is good; therefore, the laxative medicine is good', for [when Socrates' health exists the medicine] already does not; and it does not follow conversely, either. But the consequences have to be conditioned in such a way that if the end reached is good, then that by which it was reached was good, if without it the end could not have been more easily reached, and also if that by which it was reached was not bad. For although health is good, if it was acquired by committing mortal sin, then it does not follow that that deed was good. If, however, the ordering of the preceding things to the subsequent end took place naturally or by right reason, then it does follow that if the end is good, then those antecedent things were good. Also, since by error we often set up for ourselves a bad and culpable end, then those things that we order to that end are also bad and culpable because we order them to that end, even if otherwise they were good. For example, we sin by giving alms to the poor if we do not do so for the sake of God but for vainglory. But the example given by the author about punishment and sin is not verified, for the sinner does not intend the punishment (for he does not sin in order to be punished); one might say, however, that it is improperly called a final cause, just as the absent pilot is said to be the efficient cause of shipwreck.[64] For this is how we sometimes speak only because the opposite is apt to cause the opposite; therefore, since the reward is the end of the good deed, so we say the punishment is the end of sin.

64. Of course, the absent pilot can be an efficient cause only improperly speaking, for an efficient cause strictly speaking is something from the being of which there follows the being of something else, whereas the absence of the pilot is precisely his non-being on the ship. See 8.10.3.

6.4.14 The locus from generation

Generation is the transition of a thing from non-being to being. The locus from generation is the relation of the generation to the thing generated, and, conversely, the locus from the generated thing is the relation of the generated thing to the generation. The locus from generation holds constructively and destructively with the predicates 'good' and 'bad', as in 'The generation of Christ is good; therefore, Christ is good'; likewise, 'The generation of Antichrist is bad; therefore, Antichrist is bad'; likewise, 'The building of a house is good; therefore, a house is good'; 'The building of a castle is bad; therefore, a castle is bad'. The maxims are 'That whose generation is good is itself good' and 'That whose generation is bad is itself bad'. And the locus from the generated thing to the generation holds conversely, both constructively as well as destructively; and the examples and maxims should be provided in a manner analogous to the ones given above.

The fourteenth part concerns the loci from generation and from the thing generated. And the greatest difficulty is to be discussed in natural science, namely, what kind of thing generation is, i.e., for what thing or things the name 'generation' supposits. Therefore, on the basis of conclusions established in natural science I assume that where purely successive things such as time are concerned, the thing's being and its coming to be are the same, and the same applies to its corruption. For this day *is* only when it *is coming to be,* and it *is coming to be* only when it *is.* And this is quite clearly expressed by Aristotle in bk. 3 of the *Physics.*[65] In the case of things that are permanent by nature, however, as is the heat of water, the generation of the thing *is not* the thing itself, but [the thing] *will be,* so that at a precise time when the generation of the heat B *is,* the heat B *is not,* but *will be,* and also at the precise time when the heat B *is,* then its generation *is not,* but *was.* Therefore, it is clear that in the case of purely successive things this is valid: 'A is; therefore, its generation is', and also conversely one has, 'A is not' or 'was not'; 'therefore, its generation is not' or 'was not'; also, 'A is good; therefore, its generation is good', and so on for the other predicates. And the maxim is: 'Whatever is truly predicated of the name supposing for a purely successive thing is truly predicated of the name supposing for its generation', indeed, it is also predicated of the name supposing for its corruption, for that thing is the same as its generation and its corruption, as has been said.

But in the case of things of a permanent nature this is not valid: 'A is; therefore, the generation of A is', nor is it conversely, but rather this is valid: 'A

65. Aristotle, *Physics* III.1.201a15–19, 201b7–15.

is; therefore, the generation of A was' and 'The generation of A is; therefore, A will be'. And since a thing is not good or bad except when it is, what the author says needs to be modified in such a fashion that if the generation of a house is, then I do not conclude that therefore the house is good but that therefore the house will be good; also one has, 'The house is good; therefore, its generation was good'. As has been determined in the *Physics*,[66] however, we correctly say that sometimes the house and its building [process] are within the same time, namely, the building [process] first and the house later, given that we are allowed to use a considerable span of time as the present, in one part of which the house is coming to be and in the other the house is. And these [cases] will be scrutinized in the *Sophismata*.[67] Again, many other points could be noted here concerning generation and the thing generated that have been noted concerning the efficient cause and its effect, since the agent is the generating thing.

6.4.15 The locus from corruption

> Corruption is the transition of a thing from being to non-being. The locus from corruption is [the corruption's] relation to what is corrupted and, conversely, the locus from the corrupted thing is [the thing's] relation to its corruption. And both hold constructively and destructively [in the move] from the predicate 'good' to the predicate 'bad' and conversely, as in 'The corruption of the house is bad; therefore, the house is good' or 'The corruption of the house is good; therefore, the house is bad'; likewise, 'The corruption of the house is not good; therefore, the house is not bad', or again, 'The corruption of the house is not bad; therefore, the house is not good'. And we provide the following maxims: that the corruption of [that] which is bad is itself good, and conversely; and that the corruption of [that] which is good, is itself bad, and likewise negatively with the appropriate modifications. Also, analogous [rules apply to the locus] from the corrupted thing to its corruption.

The fifteenth part is about the loci from corruption to the corrupted thing and conversely. As has been said in the preceding part, it is very difficult to say what sort of thing generation is, so that now we should say that it involves no less difficulty to say what sort of thing corruption is. And it has been stated

66. Ibid.

67. *Sophismata*, chap. 7.

in natural science that just as the generation of heat is heat, so also the corruption of heat is heat.[68] Whence there arises a great difficulty if we posit that a bad and unjust man does penance and becomes virtuous, with the consequence that malice is corrupted and virtue is generated. For then the generation of virtue is the virtue itself, or a part of virtue, and thus the corruption of malice is the malice itself or a part of malice, and every part of malice is bad. And if we likewise posit that a virtue or some [other] good disposition is continuously corrupted, then the corruption of that virtue is the virtue itself or its part, and every part of a virtue is good; therefore, the corruption of that virtue is good, since the virtue itself is good. And thus the whole of what has been said about the aforementioned loci seems to be false, for it is not the case that [a thing] the corruption of which is good is itself bad; rather, it is itself good, or was good, and [a thing] the corruption of which is bad is itself bad or was bad.

Because of this difficulty and some others, we should note, as was said about generation in the preceding part, that this is not valid: 'A *is;* therefore, the corruption of A *is',* and this, which goes in the other direction, is not valid either: 'The corruption of A *is;* therefore, A *is*', but rather this is valid: 'The corruption of A *is;* therefore, A *was*'. And since it has been said that that which is not is neither good nor bad, the consequences posited before have to be corrected, if we want to speak properly, for example: 'The corruption of the house is bad; therefore, the house was good', likewise, 'The house is good; therefore, its corruption will be bad, or would be bad, should it happen be'.

But then I reply to the difficulty that was raised. And I say that although a privation is not something distinct from the deprived subject, nevertheless, we commonly call a privation of a perfection or of a disposition leading to a perfection bad. Therefore, if this is a proper locution, it follows that the subject deprived of its perfection or of the disposition to a perfection that would befit it would be bad, but this does not seem to be the case. For although an ear may lack hearing, yet it is not then bad, nor is an eye bad, although it lacks sight, nor is matter bad, although it lacks life, nor is the moon bad, although it is eclipsed. Therefore, if we call a privation bad, this is not a proper locution, and then the corruption of some perfection or some appropriate disposition will not be called bad, except insofar as its subject tends to the privation of that perfection or insofar as that subject is said to be deprived somehow of that perfection, namely, partially. Therefore, it follows that it is an improper locution to say that the corruption of perfection or an appropriate disposition is bad. Yet, such things are ordinarily and commonly said, for just as we denominate a motion from its final state [*terminus ad quem*] rather than from its

68. Buridan, *Quaestiones super octo Physicorum libros Aristotelis,* bk. 3, q. 9.

starting state [*terminus a quo*], so too we denominate a change that is not a motion, as are generation and corruption, from its final state with respect to its being good or bad, although the denomination takes place by means of some attributive [i.e., analogical] locution, as opposed to a proper one.

Furthermore, we say that generation is from non-being, as from the starting state, to being, as to the final state, and corruption [proceeds] conversely. And by being and non-being here we should understand the subject having and lacking form. For we should not think that that non-being is distinct from the subject of generation or corruption; rather, it is that subject, deprived before the generation or after the corruption. For the generation of heat, which is the same as heat, is from non-being to being in the sense that the subject earlier was deprived of heat and afterwards it has heat. And thus, conversely, corruption goes in the opposite direction from being to non-being, for then the subject first had heat and later it lacks it. Therefore, we call the subject having some disposition and the same subject lacking that disposition the two termini [i.e., the final and the starting states] of the generation and the corruption of that disposition. And the things for which the expressions '[a] subject having [a disposition]' and '[a] subject lacking [it]' supposit are not diverse, but the distinction is [merely] conceptual [*secundum rationem*]. And these points should be looked at in [the commentary on] the *Physics*.[69]

So then, since we call the subject lacking an appropriate disposition bad, or less good than it would be if it had [that disposition], and, analogously, we call the subject having an appropriate disposition good, or less bad than it would be if it did not have it, hence on account of such goodnesses or badnesses attributed to the subject lacking [a disposition] (this being what we call the final state [*terminus ad quem*] of a corruption), we call the corruption good or bad by way of attribution. For example, if there occurred in a man the corruption of virtue without the generation of malice, or even the corruption of malice without the generation of virtue, then absolutely and properly speaking, the corruption of malice would be bad, for it would still be malice or a part of malice, and the corruption of virtue would be good, for it would still be virtue or a part of virtue; yet, in terms of an attributive locution, based on that which we call the final state, the corruption of malice would then be called good, for the final state would be said to be the man lacking malice, and he is said to be good, i.e., less bad than he would be if he still had malice; and likewise the corruption of virtue would be called bad, for the final state [namely, the man lacking virtue] would be called bad, i.e., less good than he would be if he still had virtue. Therefore, it is sufficient here to take 'good' or 'bad' relatively, namely, 'good' for 'less bad' and 'bad' for 'less good'. And thus one might give

69. Ibid., q. 6.

an example in relation to a house; for the same house can be said to be good and bad for different people, say, good for Socrates and bad for Plato. The corruption of the house, therefore, would be said to be bad for Socrates, for it is understood to end up with Socrates being badly [affected], i.e., less well [affected], and thus the corruption will be good for Plato, for it is understood to end up with Plato being well [affected], i.e., less badly [affected]. And I say 'it is understood to end up with . . .' etc., for these are the things that follow upon this kind of corruption of the house, namely, Socrates being less well and Plato being less badly [affected].

6.4.16 The loci from uses

> Use [*usus*] is an operation by which we use some thing, and the thing used [*usitatum*] is the thing we use in our operation, as riding is the use of a horse and sailing the use of a ship, and the thing used, as is clear, is the horse or the ship, and the users are the men who use them for exercising their operations. The locus from uses, or from use, is the relation of uses or use to the thing used; and, conversely, the locus from the used thing is [the thing's] relation to its use. And these loci hold constructively and destructively with respect to the predicates 'good' and 'bad', as in 'Riding is good; therefore, a horse is good', and conversely 'A horse is good; therefore, riding is good', and likewise 'Playing dice [=gambling] is bad; therefore, dice are bad', and conversely. And the maxims are the following: 'That the use of which is good is itself also good, and conversely'; similarly, 'That the use of which is bad is itself bad, and conversely'.

The sixteenth part is about the loci from uses and from the things used, or from the names of uses and used things. Concerning this we should note that we use many natural as well as artificial things for our own sake. Therefore, we are their final causes, but we cannot use them to fulfill our needs or [provide for our] comfort, except by bringing them into operation. And it is this kind of operation that we call the use of those things, and thus we are the ends for the sake of which this use takes place. For use is that by means of which those things become something good or bad for us.

And in this way it is clear that the locus [proceeding] from the use to the used thing is contained under the locus from the final cause to its effect. And here the effect of the final cause is that without which the final cause cannot exist, but the converse does not hold [namely, that the effect cannot exist without the final cause]. For there cannot be the use of the ship without the

ship, or the use of the horse without the horse, but there can be a ship without any sailing or a horse without any riding. And therefore, just as we declared concerning the final cause and its effect, so we also declare concerning this [locus] that the locus from the use to the thing used holds affirmatively and not negatively with respect to the verb 'is', whereas the locus from the thing used to the use holds negatively but not affirmatively, as is clear in the case of the ship and sailing and of the horse and riding. Similarly, with respect to the predicates 'good' and 'bad' we have to modify the consequences and loci in the same way as we declared concerning the end, namely, that if the use is good, then the thing used is good, *if* without such a thing used there could not occur such or any equivalent use more conveniently, and *if* by that thing's being used nothing bad comes about.

We should also note that the author exemplified riding as the use of a horse. And we should not ask for the verification of such an example, for I do not believe that riding [*equitare*] is the [distinct] act of riding [*equitatio*], as neither is walking [*ambulare*] the [distinct] act of walking [*ambulatio*]; rather, riding is the one who rides [*equitans*], and walking is the one who walks [*ambulans*], as has been said elsewhere.[70]

Furthermore, in the following argument: 'Riding is good; therefore, a horse is good' I do not think that we should say this involves the locus from uses but rather the locus from use. But perhaps it is customary to speak in this way to indicate that the same thing may have several uses, and we can argue either *from* each of these or from a number of them together *to* the thing used, as when we say: 'Riding is good; carrying the wheat to the mill and cultivating the land are good; therefore, a horse is good'. Here we have the locus from uses, for we use a horse for all these things.

6.4.17 The loci from concurrent accidents

Concurrent accidents [*communiter accidentia*] are those that are either concomitant one with the other or are such that one of them follows the other, [in either case] in the same subject. And they are of two kinds: some of them behave in the way described always or in most cases, whereas others neither always nor in most cases but contingently so or

70. *Sophismata,* chap. 1, Fifth sophism; cf. Buridan, *Quaestiones super octo Physicorum libros Aristotelis,* bk. 3, q. 7, q. 13.

not so, or in fewer cases. The dialectical locus is taken from those of the first kind but not from those of the second kind; from the latter we would get a sophistic argument. An example of the second kind is 'He is a coxcomb; therefore, he is an adulterer'; this argument is sophistic and not dialectical, for even if there is a person who is both a coxcomb and an adulterer, yet there are many coxcombs who are not adulterers. An example of the first kind, and in the first place constructively, is the following: 'He does penance; therefore, he sinned'; the locus is from the concurrent accidents; maxim: 'If the posterior of concurrent accidents occurs, then the prior occurred'; in the second place, destructively, one has: 'He did not sin; therefore, he does not do penance'; the locus is from the concurrent accidents; maxim: 'If the prior of concurrent accidents did not occur; then neither does the posterior'.

The seventeenth part is about the locus from concurrent accidents. And we should note that the argument 'He does penance; therefore, he sinned' is not, strictly speaking, a [case of the] locus from concurrent accidents but from one of the concurrent accidents to the other. This, however, is the way people usually talk, namely, that loci from one of the concurrent accidents to the other and conversely are loci from concurrent accidents, although both are only from one of the concurrent accidents to the other.

We should also note that besides the division of concurrent accidents provided above, there is another one that should also be provided in the following terms, namely, that some concurrent accidents occur simultaneously in the same thing, and others not simultaneously but one after the other. Furthermore, it is possible that such co-occurrence and consecution is necessary in the sense that one is never without the other or in the sense that the one that is apt to occur earlier never occurs without being followed by the one that is apt to occur later. And then the locus is a necessary consequence. For example, in the case of things that necessarily occur together: 'The moon in the tail of Draco is in opposition to the sun; therefore, the moon is eclipsed', and likewise in the other direction; and, in the case of things of which one has to occur after the other: 'Today it is Saturday; therefore, tomorrow it will be Sunday', and conversely.

But otherwise it is also possible that this kind of co-occurrence or consecution is not necessary but merely contingently happens in most cases. And then the locus is not a necessary consequence but only a plausible one. And such an argument is appropriately dialectical, for it often suffices for the dialectician or the orator in order to persuade [people] or to generate some opinion that the argument have a plausible antecedent or even [only] a plausible

consequence. Therefore, even if sometime someone does penance although he did not sin, this does not mean that this argument does not hold: 'He does penance [*iste paenitet*]; therefore, he sinned'.

Again, perhaps it can be maintained that in this example the consequence was necessary. For if someone were to object that God never sinned, yet He said 'I regret [*paenitet me*][71] that I made man', one could reply that this does not concern penance properly speaking but expresses some similitude. Likewise, if someone says 'I regret that I did not kill that man' or 'that I did not take his money', we would say that although there is some instance of feeling sorry here, yet this is no real [regret or] penance [paenitentia], for the name 'penance' properly speaking does signify feeling sorry, but it also connotes that this is for the right reason and in accordance with goodwill so as to put the soul right with respect to the sin committed.

6.4.18 Some loci from the concomitants of substance other than the ones mentioned

Besides the aforementioned loci named by our author, some people say that there are also other loci from the concomitants of substance, namely, the one that goes from the conjunctive whole to its part and the one that proceeds from the conjunctive proposition to any of its categoricals, for example, 'Socrates runs and Plato disputes; therefore, Socrates runs'; again, there is the one that goes from the part of a disjunctive whole to its whole and from any categorical [component] of a disjunctive proposition to the disjunctive proposition, for example, 'Socrates runs; therefore, Socrates runs or Plato disputes'; again, one has the locus from the numerical whole to its part, for example, 'There are three; therefore, there are two', or 'You have three; therefore, you have two'; again, one has the locus from the collective whole or collective name, for example, 'A people is; therefore, a man is'; again, one has the locus from the plural to the singular, for example, 'Men exist; therefore, a man exists'.

Again, Tullius posits loci from antecedents and consequents. From the

71. To do penance and to feel regret are expressed by the same verb in Latin. See Genesis, 6:7: "And the LORD said, I will destroy man whom I have created from the face of the earth; both man, and beast, and the creeping things, and the fowls of the air; for it repenteth me that I have made them" (KJV).

antecedent [he posits] thus: 'That a man runs is true (or necessary or conceded); therefore, that an animal runs is true (or necessary or to be conceded)'; maxims: 'If the antecedent is true, then the consequent is true; if the antecedent is necessary, then the consequent is necessary; if the antecedent is conceded, then the consequent must be conceded'. From the consequent [he posits] thus: 'It is not true that an animal runs; therefore, it is not true that a man runs', and likewise with 'impossible' and 'denied'; maxims: 'If the consequent is false then the antecedent is false; if the consequent is impossible, then the antecedent is impossible; if the consequent is denied, then the antecedent is to be denied'.

The final part of this chapter is about the loci concomitant with substance that are not listed by the author. And neither our author, nor even Themistius, listed these, for they are either not dialectical loci or they are easily reduced to the ones that have been listed.

The consequences from a conjunctive [proposition] to its part or from a part of a disjunctive [proposition] to the disjunctive [proposition] are formally valid, but they are not properly arguments, in the same way as was declared earlier concerning equipollences, conversions, and subalternations, for there is no middle term or extremity in this case. And if we wanted to say that they are dialectical arguments and dialectical loci, I would say that the locus from a conjunctive [proposition] to its part is reduced to the locus from the whole-in-quantity. For a conjunction is similar to a distribution, since it is clear that a distributed term implies all its supposita conjunctively, for example: 'Every man runs; therefore, Socrates runs, and Plato runs', and so on for the singulars. The locus from the part of a disjunctive [proposition] to the disjunctive [proposition] is reduced to the locus from the part of the subjective whole to its universal whole. For a disjunction is similar to a term taken indefinitely, whence it is clear that a term taken nondistributively implies all its supposita disjunctively, and also any suppositum of a term implies the term nondistributed; for this is valid: 'A man runs; therefore, either Socrates runs or Plato runs' and so on for the others, and also this: 'Socrates runs; therefore, a man runs'.

Others posit that these loci are reduced to the locus from the integral whole to its part and conversely, for a hypothetical [proposition] is made into a whole from its categoricals. And it appears to me that although this can be true, namely, that the categoricals are integral parts of the hypothetical, yet the aforementioned consequences do not hold for the reason that this is an integrated whole and the other is its part. But this would indeed be the locus from the integral part, if we were to assert: 'A hypothetical proposition is; therefore, a categorical proposition is, or at least, a categorical proposition

would be, if it were uttered on its own'. And I speak in this disjunctive manner because of the question whether a part of a proposition is itself a proposition, this being a question that was discussed elsewhere.[72]

The locus from a numerical whole, however, is clearly the locus from the integral part. And the same holds for the locus from a collective name, for a people or an army is integrated from several parts, and its principal parts are men, for there cannot be a people or an army without men; therefore, this is valid: 'A people or an army is; therefore, men are'. But chariots and horses are not principal parts of an army, for there could be an army without these, namely, one that consists [only] of foot soldiers; therefore, this is not valid: 'An army is; therefore, a chariot is', and neither is this: 'An army is; therefore, horses are'. The same goes, and in an entirely similar fashion, for the locus from a plural term to a singular term; for a unit is understood as a part of many [things], and a plural term also supposits for many things together, whereas a singular term supposits for any of those many things separately.

According to Boethius, the loci from antecedents and consequents function in accordance with all the other loci; this is why Themistius does not list them. For even if they do not formally coincide with the others, nevertheless, virtually, or consecutively, they do coincide with them, insofar as we would concede this to be valid: 'A man runs; therefore, that a man runs is true', and conversely: 'That a man runs is true; therefore, a man runs', and so on in their own way for other propositions. If, therefore, we say: 'A man runs; therefore, an animal runs', this involves the locus from the superior to the inferior, for it is from the term 'man' to the term 'animal' with respect to the predicate 'runs'. But if we say: 'That a man runs is true; therefore, that an animal runs is true' then this involves the locus from the antecedent to the consequent, for it proceeds from the proposition 'A man runs' to the proposition 'An animal runs' with respect to the predicate 'true'. Thus also, if I say 'A house is; therefore, a wall is', this involves the locus from the integral whole to its part, and if I say 'That a house is is true; therefore, that a wall is is true', this involves the locus from the antecedent to the consequent. Also, likewise, if I say 'A wall is not; therefore, a house is not',[73] then this involves the locus from the part of the integral whole to its whole with respect to the predicate 'is', and if I say "The proposition 'A wall is' is false; therefore, so is this: 'A house is'," then this involves the locus from the consequent to the antecedent with respect to

72. See 1.7.1.

73. As is clear from the second part of the sentence, the negations should here be understood as negating the contradictory affirmative propositions, so that a semantically (but not syntactically) better translation would be: 'It is not the case that a wall is; therefore, it is not the case that a house is'.

the predicate 'false', for that there is a wall is the consequence of there being a house.

It would also appear that these loci from antecedents and consequents are not true on their own account but [only] on the basis of others. For 'That a man runs is true; therefore, that an animal runs is true' is a valid consequence only because 'A man runs; therefore, an animal runs' is a valid consequence. Likewise, 'That a house is is true; therefore, that a wall is is true' is not a valid consequence, except insofar as this is a valid consequence: 'A house is; therefore, a wall is', and so on for other cases. Therefore, Themistius had good reason to omit these loci, but Tullius lists them as if they were formally distinct from the others.[74]

But there is another problem. For after having formed a syllogism we say: "The consequent is false; therefore, so is the antecedent." So what is to be replied if one asks: "Whence the locus?" when we say: "The consequent is false; therefore, so is the antecedent"? Here it seems to me that this is similar to asking how we should respond when it is said: "Some predicate, or the predicate 'runs', is truly predicated of the species; therefore, of the genus too'." For it appears to me that this last consequence does not go from the species to the genus but from the term 'species' to the term 'genus', and these are not related to each other as a species is to a genus, but rather are correlatives. And thus also, in the first consequence, the argument did not proceed from the consequent to the antecedent but from the term 'consequent' to the term 'antecedent', which are relatively opposed. And thus perhaps such loci would appear to be from relatives; and we shall say more about this when we come to discuss relatives.

6.5 Chapter 5: On extrinsic loci

6.5.1 Some divisions of extrinsic loci

(1) Next, about extrinsic loci. And we declared above what an extrinsic locus is. (2) Extrinsic loci are divided, for some are from opposites, some from the greater [*a maiori*], some from the lesser [*a minori*], some from similarity, some from proportion, some from transumption, and some

74. See E. Stump, *Dialectic and Its Place in the Development of Medieval Logic* (Ithaca: Cornell University Press, 1989), esp. pp. 45–46, 51, 64–66.

from authority. (3) The locus from opposites is divided further by the four genera of opposition into the locus from relatives, the one from contraries, the one from privatively opposites, and the one from contradictories.

The fifth chapter is about the extrinsic loci, and it contains eleven parts. The first provides some divisions of extrinsic loci, the second is about the locus from relatives, the third is about the locus from contraries, the fourth is about the locus from privative opposites, the fifth is about the locus from contradictories, the sixth is about the loci from greater and lesser, the seventh is about the locus from similarity, the eighth is about the locus from proportion, the ninth is about the loci from transumption, the tenth is about the locus from authority, and the eleventh is about some other loci, which are not listed by the author. And these parts will be referenced accordingly as we proceed.

The first part consists of three sections, which are obvious. For the first puts forth the aim of the chapter, referring us to the definition of extrinsic locus given earlier, the second divides extrinsic loci into the locus from opposites, etc., and the third subdivides the locus from opposites. These divisions and their members will be clarified in the subsequent parts.

6.5.2 The locus from relatives

(1) We call 'relatives' terms pertaining to the category of relation, and which these are has been declared in the treatise on the categories.[75] (2) And we call 'relatively opposed' terms pertaining to the category of relation that are predicated correlatively, for example, 'father' and 'son'. (3) The locus from relatives is the relation of one to the other of these relatively opposed [terms]. (4) The locus from relatives holds both constructively and destructively with respect to the verb 'is', for example: 'A father is; therefore, a son is', or 'No father is; therefore, no son is';[76] maxim: 'If we posit one of the relatives, or relatively opposed [terms], the other is posited too, and if we remove one of them, the other is removed too'. (5) Again, the locus from relatives holds constructively and destructively with respect to the conversion of either relative with the other, for example, 'Socrates is the father of Plato; therefore; Plato is the

75. See 3.4.1.

76. *Pater non est; ergo filius non est.* Again, the negation has to be understood as having wide scope, for otherwise the inference would not be valid.

son of Socrates', or 'Socrates is similar to Plato; therefore, Plato is similar to Socrates'. (6) Again, according to our author the locus from relative opposites holds [proceeding] *from* the affirmation of one of the relative opposites of some subject with respect to a third [term] with respect to which it is predicated, *to* the negation of the other correlative of the same subject with respect to the same third, as in 'Socrates is the father of Plato; therefore, Socrates is not the son of Plato'.[77]

The second part is about the locus from relatives or relative opposites. And I do not think that any of the foregoing examples should be called [an instance of] the locus from relatives, or relative opposites, but rather they should be said to proceed from one of the relatives, or relative opposites, to the other, neither should they be said to proceed from the opposites, but rather from one opposite to the other. Nevertheless, it is customary to say so, because both the term *from which* and the term *to which* the locus proceeds are called by the shared name 'relatives' or 'relative opposites'.

This part contains six parts. The first refers us back to the definition of relatives given in the treatise on categories, and the second describes relative opposites, and this is clear in itself. The third describes the locus from relatives, or what should instead be called the locus from the relative, or relative opposite, as has already been remarked. The other three sections assign three rules concerning the locus from relatives.

The fourth section seems to hold by virtue of the property of relatives that they exist simultaneously by their nature, and this was explained in the treatise on categories;[78] this therefore should be consulted, and then it will be known how this section holds or does not hold.

The fifth section holds by the property of relatives, as though by a maxim, to the effect that all relatives are predicated convertibly, and how this should be understood was also laid down in the treatise on categories.[79]

As to the sixth section, it is clear that it is not effective in the case of relatives of parity, namely, those that are named by the same name, with which we also dealt in the treatise on categories.[80] But it is not valid in the case of others as well, except with some modification. For the terms 'cause' and 'effect' are predicated correlatively, and yet this is not valid: 'Matter is the cause of form;

77. In this example, the first correlative is 'father of', which is affirmatively predicated of the subject 'Socrates' with respect to the third term 'Plato', and the other correlative is 'son of', which is negated of the same subject, 'Socrates', with respect to the same third term, 'Plato'.

78. See 3.4.6.

79. See 3.4.5.

80. See 3.4.2.

therefore, matter is not the effect of form', for both are cause and effect of each other; and this is not valid either: "The proposition 'A man runs' is antecedent to this: 'Something risible runs'; therefore, the former is not consequent to the latter," for each follows from the other. Therefore we have to say that the same thing is never both the cause and effect of the same thing where the same mode of causality is concerned, nor is the same thing both antecedent and consequent to the same on the basis of the same consequence. In the same way, concerning [the claim] that the locus from relatives holds from the affirmation to the negation with conversion, we have to say that it does thus: 'Socrates is the father of Plato; therefore, Plato is not the father of Socrates'; for there is a counterinstance to this with relatives of parity, and as there was immediately a counterinstance with convertible terms, we have to say the same as was said earlier.

But we should also note well that just as there are diverse species of relatives, so too there are diverse species of the loci from relatives, and these loci are such that they are not to be called 'from relatives' with reference to some general relation of relatives, but according to the special relation of the relative terms. For example, it has been said that from the terms 'antecedent' and 'consequent' there emerge loci from relatives with respect to the terms 'true' and 'false', but this is not so just because they are relatives, but because they are relatives of such and such a sort.

Thus it would also be conceded that this is [a case of] the locus from relatives: 'Socrates is the father of Plato; therefore, Plato is not the father of Socrates', but this is not from relatives insofar as they are relatives, but insofar as they are relatives of a certain sort, namely, of disparity. In this way also the following argument would be placed among the loci from relatives: 'The whole is white; therefore, its part is white'; and the maxim would be: 'What the whole is like, such also is some part thereof'. It is true that this maxim needs to be modified, namely, by restricting 'such' to the third species of quality, or to terms in the genus of quality that signify some disposition added to [the term] that supposits for the subject. But I do not say anything more about this, since these are just examples here. It is clear, however, that this consequence does not hold on account of the common relation of relatives to each other but on account of the relation of the terms 'whole' and 'part' to each other. In the same way, if it is said 'One of the contradictories is true; therefore, the other is false', the locus is not formally from one of the contradictories to the other but from the term 'contradictory' to the term 'contradictory', which are predicated correlatively with respect to each other. Therefore, the locus is from one relative to another that is its correlative, and this consequence does not hold because they are relatives but because they are relatives of such and such a

sort. For the consequence that proceeds from the subalternating [proposition] to its subaltern would not be valid, although they are related as correlatives.[81]

Furthermore, we should note that Aristotle, in bk. 2 of the *Topics*,[82] posits the locus that we should rightly call the locus from relatives to their correlatives, as opposed to that which proceeds from one correlative to the other, for example: 'A double is a multiple; therefore, a subdouble [i.e., a half] is a submultiple'.[83] And it holds by the following rule, or maxim: 'If one of two opposites applies to one of two other opposites, then the opposite of the first applies to the opposite of the second',[84] and of this we shall say more when we discuss the locus from contradictories.

6.5.3 The locus from contraries

(1) Contraries are items that when posited under the same genus are maximally distant and are apt to belong to the same subject successively but not simultaneously. (2) The locus from contraries is the relation of one of the contraries to the other. (3) And it holds destructively, namely, from the affirmation of one of the contraries of a subject to the negation of another of the same subject, for example: 'Socrates is white; therefore, Socrates is not black'; maxim: 'Of whatever one of the contraries is truly affirmed, of the same the other is truly denied'. (4) Some contraries are mediate, some are immediate. The mediates are the ones that may have a middle [between them] in the same subject, as for example, between 'white' and 'black' the middle ones are 'red' and 'green'; and

81. Namely, this would not be a valid consequence: 'An A proposition is true; therefore, an I proposition is false'. So it is not true in general that if one of the correlatives is true, then the other is false.

82. Aristotle, *Topics* II.8.14a14–26.

83. A 'submultiple' is what in contemporary arithmetic we would call a 'factor': if n × x is a multiple of x, then x is a submultiple of n × x and vice versa. So, e.g., since 2 × x is the double of x (say, 6 is the double of 3), x is the subdouble, i.e., the half of 2 × x (say, 3 is the subdouble, or half, of 6).

84. *Si oppositum est in opposito, et propositum in proposito.* For example, if we say: 'If the affirmation is true, then the negation is false', here we have two pairs of opposites: affirmation (a)/negation (n); true (t)/false (f), and since the first member of the second pair applies to the first member of the first pair, the second member of the second pair also applies to the second member of the first pair, i.e., since (a) is (t), (n) is (f).

the immediate ones are those that cannot have a middle between them, as are 'healthy' and 'sick'. (5) The locus from immediate contraries holds constructively, from the negation of the one of some subject to the affirmation of the other of the same, as in 'Socrates is not sick; therefore, he is healthy'; maxim: 'From whatever one of the immediate contraries is removed, to the same the other is attributed'.

The third part is about the loci from contraries, and it contains five sections. The first is the description of contraries, which is to be expounded in [the commentary on] bk. 10 of the *Metaphysics*,[85] and we have also discussed this in chapter 8 of the treatise on categories.[86]

The second section is the description of the loci from contraries, though it should not be called the locus from contraries but rather that which goes from one of the contraries to the other. It is true, nevertheless, that Aristotle in bk. 2 of the *Topics*[87] provides a locus that is rightly said to be from contraries, for example: 'Justice is a virtue; therefore, injustice is a vice'; this will be explained when we come to discuss contradictories.

The third section contains a rule about the locus from contraries, and to this we object as follows. First, this is not valid: 'B was white; therefore, B was not black'.

Second, it seems possible that the same thing is both white and black at the same time, namely, in the case of a shield one half of which is white and the other half black. This is proved in two ways. First, since everything that is colored is colored by some color, and that shield is colored, therefore, it is colored by some color, and this is none other but whiteness or blackness; but if by whiteness, then it is white, and for the same reason it would be said to be black; therefore, we have to concede that it is white and black.

Again, this is confirmed, given the assumption that the whole is denominated from its greater part, for example, assuming that B would be called white if its greater part were white, although its smaller part were black, and that it would be called black, if its greater part were black; but a greater part of that shield is white and a greater part thereof is also black; therefore, it is white and black. I must therefore provide a proof that its greater part is white, and [for the sake of simplicity] in place of the shield I take a line AB, one half of which AC is totally white, and the other half CB is totally black; then I divide the line AB differently, namely, into two parts such that one of them contains three fourths and the other the remaining one fourth [of the line]. The first of

85. Buridan, *Quaestiones in Aristotelis Metaphysicam,* bk. 10, q. 2.

86. See 3.8.3.

87. Aristotle, *Topics* II.9.114b5–15.

these parts will be [called] AD, and the second DB; then it is clear that the part AD of the whole AB is greater than the part DB, but that part AD is white; therefore, it follows that a greater part of AB is white, and, consequently, that AB is white. And that the part AD is white is clear, because a greater part of it is white, namely, AC, which is greater than CD; and it could be argued in the same way that a greater part of AB is black.

To the first objection it is replied that the rule is to be understood to apply to propositions about the present and actuality [*de praesenti et de inesse*] and not about the past, future, or possibility [*de praeterito vel futuro vel de possibili*]. Furthermore, even concerning propositions about the present, the rule does not have to be true, except in the case in which the affirmative is assumed to be true for the whole present time, as has been said in the *Sophismata,* in the fourth sophism of the seventh chapter.

To the other objection, some people reply that the shield is not [one] colored [thing] [*coloratum*] but several colored [things] [*plura colorata*], for it is its two halves, which are colored [*coloratae*].[88] Others concede that it is one colored thing [*coloratum*], though not [colored] by one color but by several; therefore, the proposition that everything colored is colored by some color would be denied; for one should say: '. . . by some color or by some colors'. We should briefly reply that if we concede that the whole is denominated by the denomination of the greater part, then this need not be true, unless that greater part in itself is wholly of such and a such a sort, which is not the case here.

The fourth section puts forth a division of contraries, which Aristotle gives in the *Categories,*[89] the exposition and verification of which belong to bk. 10 of the *Metaphysics.*[90]

But the fifth section provides a rule, or maxim, concerning immediate contraries, and to this we raise an objection. If Socrates does not exist, then the consequence is false, for the antecedent is true, and the consequent is false. Again, this is not valid: 'A stone is not sick; therefore, a stone is healthy'. Again, 'virtue' and 'vice' are immediate contraries, yet this is not valid: 'A baby is not virtuous; therefore, it is vicious'.

To this it is replied that this rule is to be subject to certain conditions, namely, that there should be constancy of the subject and that the subject should be apt to receive those contraries, and also that the time should be

88. So Buridan's real point here is not that the shield is colored by several colors, but that it is in fact several colored things (*colorata* = colored [things], the plural form of *coloratum* = [a] colored [thing]), namely, its two halves, each of which is one colored thing *(coloratum).*

89. Aristotle, *Categories* 10.11b33–12a25.

90. Aristotle, *Metaphysics* X.3–7.1054a20–1057b34; Buridan, *Quaestiones in Aristotelis Metaphysicam,* bk. 10, qq. 2–6.

appropriate for receiving them. And these three [conditions] eliminate these three objections.

Finally, we should note that some people call the following consequence 'constructive': 'Socrates is white; therefore, Socrates is not black', for the antecedent is affirmative, and the following they call 'destructive': 'Socrates is not healthy; therefore, he is sick'. But I refer to them the other way around, for an argument is called destructive because it brings in [*infert*] the negative side of a question and 'constructive' because it infers the affirmative side of the question. So if you present the argument 'Socrates is white; therefore, Socrates is not black', then construction of a corresponding syllogism shows that the syllogism will be truly destructive, namely: 'No white thing is black; Socrates is white; therefore, Socrates is not black'. And Aristotle obviously speaks in this manner in bk. 2 of the *Topics,* and indeed, throughout the whole book.

6.5.4 The locus from privative opposites

> What privative opposites are was stated in the treatise on categories.[91] The locus from privative opposites is the relation of one of the privative opposites to the other. And it holds destructively, as in 'Socrates sees; therefore, he is not blind'. Maxim: 'Of whatever one of the privative opposites is truly affirmed, of the same the other is truly denied'. It also holds constructively, assuming constancy of the subject, its aptitude, and a determinate time, as has been said in connection with immediate contraries, as in 'Socrates does not see, and has the determinate time in which to see; therefore, he is blind'.

The fourth part is about the locus from privative opposites. And there is a difference between saying 'locus from privative opposites' and saying 'locus from one of the privative opposites to the other', as has been remarked in connection with relatives and contraries. And there is no problem in this part that would not have been solved either in the two preceding parts or in the treatise on categories, in the chapter on oppositions.[92]

But in the example about the blind and seeing person we should realize that 'blind' and 'seeing' are not privatively opposed, unless we take 'seeing' for 'having sight'; for someone who is asleep, although he is not actually seeing, is still not said to be blind.

91. See 3.8.4.

92. See ibid.; cf. Aristotle, *Categories* 10.12a26–13a37.

We should also note that in the plural number this is not valid: 'These two men do not see, although they have the appropriate time in which to see; therefore, they are blind'. For one would have a counterinstance if one of them were sighted and the other blind, for then they would neither be [two] sighted [men] [*videntes*] nor [two] blind [men] [*caeci*].[93] Therefore, we should also conclude as a corollary that with privative terms, because of the implied negation, the locus is not applicable to the solution of problems of definition, or determination, proceeding from the singular to the plural number. For this is not valid: '[A thing] at rest [*quiescens*] is that which is not moving, although it is apt to move; therefore, [things] at rest [*quiescentia*] are those which are not moving, although they are apt to move'.

6.5.5 The locus from contradictories

(1) Likewise, what a contradiction is, whether with reference to terms or to propositions, has been laid down in the treatise on categories.[94] (2) The locus from contradictories is the relation of one of the contradictories to the other. (3) And it holds constructively and destructively, as far as the contradiction of propositions is concerned, namely, constructively from true to false or conversely, as in 'That Socrates runs is true; therefore, that Socrates does not run is false', or conversely; maxim: 'If one of the contradictories is true, then the other is false, and conversely'; [it holds] destructively, from true to true and from false to false, for example, 'That Socrates runs is true; therefore, the Socrates does not run is not true', or 'That Socrates runs is false; therefore, that Socrates does not run is not false'; maxim: 'It is impossible for both contradictories to be true or false at the same time'. (4) In the contradiction of terms the locus holds constructively and destructively, namely, from the negation to the affirmation and from the affirmation to the negation, as in 'A is a man; therefore, A is not a non-man', or 'A is not a man; therefore, A is a non-man'; maxim: 'Of whatever one of the contradictory terms is truly affirmed, of the same the other is truly denied'.

93. The reason why the argument is invalid is that the proposition 'These two men see' is true if and only if both men are sighted, whence its negation, 'These two men do not see', can be true if only one of them does not see, whereas 'These two men are blind' is true only if both men are blind. Similar considerations apply to the next example as well.

94. See 3.8.5.

The fifth part is about the locus from contradictories, or from one of the contradictories to the other, and it contains four sections. The first refers us back to the treatise on categories, and the second describes the locus from contradictories; and they are clear, if we take into account the preceding [discussion].

The third provides a rule concerning the locus from one of the contradictory propositions to the other, and it is also generally accepted. But we should note that one could assign in the same way the locus from one of the contraries to the other, for example, 'That every man runs is true; therefore, that no man runs is false'; maxim: 'If one of the contraries is true, then the other is false; for they cannot be true together'. Likewise, [one could assign the locus] from one of the subcontraries to the other, for example, 'That a man runs is false; therefore, that a man does not run is true'; maxim: 'If one of the subcontraries is false, then the other is true; for they cannot be false together'. Similarly, [one could assign the locus] from one of the subalterns to the other, for example, 'That every man runs is true; therefore, that some man runs is true', or 'That some man runs is false; therefore, that every man runs is false'; maxim: 'If the universal of the subalterns is true, then the particular is true, and if the particular is false, then the universal is false'; and this is so because the particular follows from the universal.

The fourth section provides the rule covering the moves from one of the contradictory terms to the other. And the rule is absolutely true from the affirmation to the negation, for example, 'A is a man; therefore, A is not a non-man', or 'A is a non-man; therefore, A is not a man', maintaining, however, what was said in the *Sophismata,* in the fourth sophism of the seventh chapter. But for the truth of this rule when one goes from the negation to the affirmation, we have to assume the constancy of the subject. For this is not valid: 'A chimera is not a man; therefore, a chimera is a non-man'.

Now we should consider, as has already been mentioned, that Aristotle not only posited loci from one of the contradictories to the other, but also from contraries to their contraries, and the same holds for relatives, privative opposites, and contradictories. But there is a difference here, as Aristotle says, for where privatives, contraries, and relatives are concerned, the consequence holds "directly" [*in ipso*], whereas with contradictories the consequence holds "conversely" [*e contrario*]. And in both cases this happens in two ways. In one way [it happens] so that the movement goes from one categorical proposition constituted from some terms to the other proposition constituted from the opposite terms, in the other way so that the movement goes from one consequence constituted from some terms to the other consequence constituted from the opposite terms. In the movement from a consequence to

a consequence we call a consequence "direct" [*in ipso,* in it], when from the fact that some consequent truly follows from some antecedent we conclude that the opposite of the consequent follows from the opposite of the antecedent; and we call a consequence "converse" [*e contrario,* the other way around] when from the fact that some consequent follows from some antecedent we conclude that the opposite of the antecedent follows from the opposite of the consequent.

We say, therefore, that with contradictories the converse consequence holds constructively and destructively, constructively thus: "This is valid: 'A man runs; therefore, an animal runs'; therefore, this is valid: 'No animal runs; therefore, no man runs'," destructively thus: "This is not valid: 'A man runs; therefore, a donkey walks'; therefore, this is not valid: 'No donkey walks; therefore, no man runs' "; maxim: 'If the antecedent entails the consequent, then the contradictory of the consequent entails the contradictory of the antecedent, and if not, then it does not'. But with relative terms, and with contraries and privative opposites, the direct consequence is valid. An example with relatives is the following: 'Being a double entails being a multiple; therefore, being a subdouble entails being a submultiple'.[95] An example with contraries is the following: 'Being just entails being virtuous; therefore, being unjust entails being vicious'; an example with privatives, 'Having sight entails having a sense; therefore, lacking sight, or being blind, entails lacking a sense'.

In the movement from one categorical to another the converse consequence also holds with contradictories, and the direct one with the other opposites. An example with contradictories is the following: 'Every man is an animal; therefore, every non-animal is a non-man', an example with relatives, 'Every double is a multiple; therefore, every subdouble is a submultiple', an example with contraries, 'Every justice is a virtue; therefore, every injustice is a vice', an example with privatives, 'Every sight is a sense; therefore, every blindness is a lack of a sense'.

And we should note that in all these loci, or consequences from opposites, the ancients usually assigned the common rule, or maxim: 'If one of two opposites applies to one of two other opposites, then the opposite of the first applies to the opposite of the second'.[96] And as far as the converse consequence is concerned, then for any given proposition, if the contradictory of the subject is truly predicated of the contradictory of the predicate, then the predicate is truly predicated of the subject; and as far as the direct consequence is

95. See 6.5.3 n. 83.

96. See 6.5.3 n. 84. *Si oppositum in opposito, et propositum in proposito.*

concerned, then for any given proposition, if the opposite of the predicate is predicated of the opposite of the subject, then the predicate is predicated of the subject.

But there are several objections to this claim of Aristotle's. The first concerns the converse consequence, for this does not follow: 'God is a being; therefore, a non-being is a non-God', likewise, this does not follow: 'A chimera is not a donkey; therefore, a non-donkey is not a non-chimera', for the antecedent is true and the consequent is false, assuming that the negations are infinite; similarly, 'A non-animal is a non-man; therefore, a man is a non-animal'.

Solution: We should note that, as we have said elsewhere, by 'contradictory terms' we understand terms that are different only with respect to being finite or infinite, as are 'man' and 'non-man', 'animal' and 'non-animal', 'chimera' and 'non-chimera', etc. To ask, therefore, whether a converse consequence holds with contradictory terms is to ask whether the conversion of a proposition retaining its quality and quantity, but changing its finite terms into infinite ones, and conversely, is valid, and this [kind of] conversion our author also calls '[conversion] by contraposition'. And it has been said elsewhere,[97] and it is restated now, that such conversions are not valid, except with the assumption of the constancy of the terms, both the finite and the infinite ones.

For example, this is not a valid consequence: 'Every (or some) non-man is not a chimera; therefore, every (or some) chimera is a man'. Similarly, if we were to say that the term 'non-being' does not supposit for any thing or things,[98] this would not be a valid consequence: 'Every (or some) man is a being; therefore, every (or some) non-being is a non-man'. If, however, we said that the term 'non-being' does supposit for some things, although not for some thing (for a people, or an army, is not a being), then it would not be unacceptable to concede the consequence 'Every man is a being; therefore, every non-being is a non-man'.[99]

Furthermore, even if we assume the constancy of terms, the consequence from a particular affirmative to a particular affirmative is not formally valid, nor is the consequence from a universal negative to a universal negative. For this is not valid: 'A non-man is a non-stone; therefore, a stone is a man'; simi-

97. See 1.6.4.

98. Buridan's real position is that it does supposit for several beings taken together, since, e.g., it is true to say that an army is a non-being, given that it is not a being but several beings, namely, the soldiers. See 4.2.6.

99. An army, which is a non-being (since it is not a being but several beings) is a non-man, although it is several men.

larly, this is not valid: 'No man is a non-animal; therefore, no animal is a non-man', nor also 'No man is a stone; therefore, no non-stone is a non-man'. But we should concede that such consequences are valid with universal affirmatives and particular negatives and assuming the constancy of terms.

Furthermore, there are some objections to the direct consequence involving contrary opposites. For this is not valid: 'Justice is a virtue; therefore, injustice is a vice'; for if everybody were just, then the antecedent would be true and the consequent would be false. This is not valid either: '[Something] white is sweet; therefore, [something] black is bitter', nor is this: 'prodigality is bad; therefore, liberality is good'.

Solution: It must be said that in order that such a consequence can be applied as an instance of the locus of contraries it is required that both the subject and the predicate have a contrary. For it is not necessary that if 'color' is predicated of whiteness, then the contrary of color be predicated of the contrary of whiteness, for 'color' has no contrary.

Next, the validity of the consequence requires, first, constancy of the terms, second, that the predication be not accidental [*per accidens*] but essential [*per se*], and third, that neither contrary of a contrariety be contained under a contrary of another contrariety. And this eliminates the three counterinstances given above.

Furthermore, an objection is raised concerning relatives. For this is not valid: 'The father is a slave; therefore, the son is a master'. The reply, as before, is that the constancy of terms is required, and that the predication should not be accidental [*per accidens*] but essential [*per se*].

There is also an objection concerning privative opposites. For it does not follow that if every tangible is sensible, then every intangible is insensible. Nor does it follow that if everything having sight has a sense, then everything lacking sight lacks sense, for if it has touch without sight, then the antecedent is true and the consequent is false, since the term 'sense' is here distributed (whence this is valid: 'lacks sense; therefore, lacks every sense').

I briefly respond that the consequence is not valid except in this way: 'Every visible is sensible; therefore, every invisible is insensible by sight', or again in this way: 'Everything having sight has a sense; therefore, everything lacking sight is lacking a sense'.[100]

Still, concerning the aforementioned loci from opposites some people ask

100. *Omne habens visum est habens sensum; ergo omne visu privatum est sensu privatum.* In this construction, Buridan's way of providing a formulation in which *sensus* (sense) is not distributed is placing it before the participle. The corresponding construction is not available in English, but adding the indefinite article to 'sense' achieves the same effect, namely, removing the distribution of 'sense'.

whether they should be called extrinsic loci. For the concept of privation includes the concept of habit, since a privation is defined in terms of a habit, and one of the contradictory terms implies in itself the other coupled with a negation. Therefore, it seems that in such cases one is included in the other according to some mode of being in; therefore, the locus seems to be intrinsic. Furthermore, a locus is said to be intermediate because the terms signify the same but do not supposit for the same, as 'whiteness' and 'white'. But this is the case with contradictory terms, or even with privatively opposed terms; therefore, these loci are to be called intermediate.

Solution: I say that one might distinguish loci so that these loci would be called *intrinsic* and also so that they should be called *intermediate.* But according to the way in which Themistius and our author sorted them they are called extrinsic, for the terms do not supposit for the same, and that which is supposited for by one term is not included in what the other supposits for according to some mode of *being in,* although one term may indeed be included in the other. For we said earlier that this is the reason why our author calls loci 'extrinsic'.

6.5.6 The loci from greater and lesser

> 'The greater,' as taken here, is something that exceeds another in power or force, as a king does a count; and 'the lesser' is something that is exceeded by another. The locus from the greater is its relation to the lesser. The locus from the lesser is its relation to the greater. The locus from the greater holds destructively, for example, 'The king cannot take this castle; therefore, neither can the count'; maxim: 'What the greater cannot do, neither can the lesser'. The locus from the minor holds constructively, for example, 'The count can take this castle; therefore, so can the king'; [maxim:] what the lesser can do, so can the greater.

The sixth part is about the loci from the greater and the lesser. And it is clear that these loci (given the descriptions of the greater and the lesser here provided) are not from what is greater or lesser in extension, but in power or force, i.e., they are from the stronger to the weaker and from the weaker to the stronger, or from the more powerful to the less powerful and conversely. And this account should be glossed: "that is, from the name suppositing for the more powerful to the name suppositing for the less powerful."

It is true that it is customary to give maxims that are more general than

the ones just given, namely, so that the maxim of the locus from the greater is this: 'If that which more greatly appears to inhere [*inesse*] does not inhere, then neither does that which appears less to do so', and the maxim of the locus from the lesser is this: 'If that which less greatly appears to inhere does inhere, then so does that which more greatly appears to do so'. And then, if we were to interpret [*describere*] 'greater' and 'lesser' in a way corresponding to these maxims, we would have to say that by 'greater' and 'lesser' we would have to understand the greater or lesser appearance that the predicate inheres in the subject, i.e., that it is truly affirmed of it.[101]

And Aristotle, in bk. 2 of the *Topics*,[102] propounds three combinations of this. The first occurs when we compare one predicate to two subjects, and the maxim is this: 'If some predicate does not inhere [*inest*] in a subject in which it more greatly appears to inhere, then it does not inhere in the one in which it appears less greatly to inhere; and if it inheres in that in which it appears less greatly to inhere, then it inheres in that in which it more greatly appears [to inhere]'. And the example given about the king and the count with respect to their being or not being able to take the castle belongs to this combination.

The second combination [propounded by Aristotle] occurs when we compare two predicates to one subject, as here: 'If the king cannot defeat the soldier, then he cannot defeat the count, and if he can defeat the count, then he can defeat the soldier', and so forth with other predicables, as when perhaps I have drunk enough, and I am offered some good wine, and I do not want to drink that wine, one should conclude that I do not want to drink because I am not thirsty anymore; therefore, no other [drink] should be offered to me. And the maxim is 'If that which more greatly appears to inhere in something does not inhere in it, then neither does that inhere which appears to do so less greatly, and if that which appears less greatly to inhere in something does inhere in it, then so does that which more greatly appears to do so'. And here we should take inhering [*inesse*] to amount to being predicated affirmatively, as was stated.[103]

The third combination [provided by Aristotle] occurs when we compare two predicates to two subjects. And the maxim is 'If the predicate that more greatly appears to inhere in its subject does not inhere in it, then neither does another predicate that appears less greatly to inhere in another subject inhere in the latter, and if that which appears less greatly to inhere does inhere, then so does that which appears to do so more greatly'.

101. Here is a very clear example of Buridan's usage of 'inherence' without any of the ontological or semantical implications of the inherence theory of predication. See 6.5.6 n. 103.

102. Aristotle, *Topics* II.10.115a5–11 ff.

103. See 6.5.6 n. 101.

It appears to me, therefore, that these loci from the greater and from the lesser should be said to be based on the comparisons of the predicate's more or less appearing to inhere in the subject. Therefore, Aristotle calls these the loci from the more and from the less [*a magis et minus*] and not from the greater and from the lesser [*a majori et minori*]. And if dialectical arguments are based on comparisons of more and less, then they can be reduced to the loci that are called from more and less. When we are talking about more and less, however, it seems that we should not understand this to concern evident appearance, nor sophistic appearance, but plausible appearance. Therefore, such loci are neither demonstrative nor sophistic, but they should be regarded as dialectical, and as ones that generate opinion or persuasion by plausibility.

Again, Aristotle, in bk. 2 of the *Topics*,[104] propounds yet another mode of argument, not from the more to the less, nor conversely, but from the noncompared [*simpliciter*] to the more, and to the most, or conversely, by the rule [that says] 'If the noncompared follows from the noncompared, then the more follows from the more, and the most from the most'; for example, if this is valid: 'Pleasurable; therefore, good', then this is likewise valid: 'More pleasurable; therefore, better' and 'Most [pleasurable]; therefore, best'.

But there are a great number of counterinstances to this locus, or consequence, which had better be looked at in bk. 2 of the *Topics.* For the moment, however, I provide a modification, namely, that first it should be assumed that the terms are comparable with respect to more, less, and most, and second, that the consequences should involve terms such that the entailed term should be essentially [*essentialiter*] predicable of the entailing term or at least predicable *per se* in the sense in which the proper attribute [is predicable] of its proper subject.[105] For example, because of failing to meet the first condition, it is not necessary that if being similar entails being relative, that being more similar should entail being more relative; and because of failing to meet the second, it is not necessary that if being white entails being big, then being whiter should entail being bigger. But the rule modified in this way is plausible.

Furthermore, Aristotle in the place referred to above seems to have another rule in mind, namely, that if the predicate taken noncomparatively [*praedicatum sumptum simpliciter*] is truly predicated of a subject that is also taken noncomparatively, then of the same subject taken with 'more' [*secundum magis*] the predicate taken with 'more' is also truly predicated, and the same goes for 'most' [*de maxime ad maxime*]. And for the verification of this rule one must add the previous conditions and the constancy of terms.

104. Aristotle, *Topics* II.11.115a25ff.

105. See 8.6.3.

6.5.7 The locus from similarity

Similarity is the same quality of different things. The locus from similarity is the relation of one of the similar things to the other. And it holds constructively and destructively, constructively thus: 'Just as risibility seems to inhere in a man so does neighing in a horse; but a man is risible; therefore, a horse neighs', or thus, 'Risibility inheres in a man as his property [*proprium*]; therefore, neighing inheres in a horse as its property'; maxim: 'Of similar things the judgment should be similar'. [It holds] destructively thus: 'Animality seems to inhere similarly in a man and in a horse; but it does not inhere in a man as his property; therefore, neither does it inhere in a horse as its property'; the maxim is the same as above.

The seventh part is about the locus from similarity. And at its beginning we have a description of 'similarity' strictly speaking, as when we say that Socrates and Plato are similar, because both of them are white or wise, in accordance with what is said in the *Categories,* namely, that it is a property of quality that things are said to be similar or dissimilar on account of it.[106] But it seems to me that similitude here should instead be taken in relation to second intentions, insofar as it belongs to dialectical loci, so that, just as in the preceding part by 'greater' or 'less' we understood the greater or lesser appearance that the predicate inheres in the subject, so here by 'similar' we should understand the similar, or equal, appearance that the predicates inhere in their subject or that they do not. Therefore, since the appearance is similar, one can correctly infer with likelihood that if this inheres in that, then this other inheres in that other, and if not, then not, and if this inheres in that as a property or genus, then so does this other in that. For in this way it is correct to say that of similar things the judgment should be similar.

And we should realize, just as it was said concerning 'greater' and 'lesser', that this similar appearance [of their inherence] can be of many predicates [said] of one subject, or of one [predicate said] of many [subjects], or of many [said] of many. And it is easy to give examples.

6.5.8 The locus from proportion

(1) A proportion is the similar relation of many things to some one thing or to many things. (2) The locus from proportion is the relation of one of

106. Aristotle, *Categories* 8.11a15–19.

the proportionate things to the other. (3) And it holds constructively or destructively, as here: 'Just as the captain is to the governing of the ship, so is the teacher to the governing of the class; but to govern the ship the captain is not to be selected by chance but on the basis of his experience in the art of navigation; therefore, to govern the class the teacher is not to be selected by chance but on the basis of his knowledge of teaching'; maxim: 'Proportionals call for proportional judgments'. (4) This locus is different from the locus from similarity because in the locus from similarity the comparison concerns the similar appearance of the inherence of the predicate in the subjects, whereas the locus from proportionality concerns the comparison of the relation of some things to the relation of others.

The eighth part is about the locus from proportion, and it contains four sections. But what is given here does not seem to be the description of 'proportion' absolutely speaking [*simpliciter*], but rather it is a description of a comparison of one proportion to another similar proportion. For a proportion absolutely speaking is the relation of one thing to another, as that of one line to another, and [then] the relation is [that of being] double or triple, or perhaps the proportion of equality, as that of one number to another, or to a unit, as the [relation of] the captain to the ship to be navigated.[107] But the relation of many to one or to many is already the comparison of a proportion to a proportion on account of similarity, as for example, the relation of two to one is not properly speaking the same as that of four to two, but is a similarity of proportions, for in both cases we have the proportion of the double to its half. And viewed in this way, the similar relation of the proportion of the captain to the ship and that of the teacher to the class is also not a simple proportion but the relation of one proportion to another proportion.

The second section describes the locus from proportion, [stating] that it is the relation of one of the proportionate things to the other. And it would be better to say that the locus from proportion is the relation of one proportion to another similar proportion, as that which holds between the proportion of the captain to the ship and the proportion of the teacher to the class. And the appropriate maxim is that of similar proportions the judgment is similar.

The third section exemplifies how the locus from proportion should hold. And it is clear enough.

107. *Proportio enim simpliciter est habitudo unius ad unum, ut unius lineae ad aliam lineam, et est proportio dupla vel tripla, vel forte proportio aequalitatis, ut unius numeri ad alium numerum, vel ad unitatem, ut nautae regentis ad navem regendam.* The text seems to be corrupt here, but, regardless of the examples, the point is clear. A proportion is a relation between two items, whereas a proportionality is the similarity of two such proportions.

The fourth section lays down the difference between the locus from similarity and the locus from proportion. And it seems to me to be the intention of Aristotle that the locus from proportion should be contained under the locus from similarity, which is reasonable, for it is a relation of something similar to something similar, namely, the relation of one of the similar proportions to the other. Therefore, Aristotle in bk. 2 of the *Topics* does not posit a locus from proportion distinct from that from similarity. Nor is what is usually said correct, namely, that the locus from similarity concerns the similarity of inherence, whereas the locus from proportion concerns the similarity of relation, for in the end they coincide, although there is a diversity of words. So Aristotle, in bk. 2 of the *Topics,* expounds the locus from similarity in terms of the similarity of relation when he says: "further, in the case of those things that are similar, they are similarly related"; and Aristotle later says: "for if one of several similar things is similarly related, then the same applies to the other similar things."[108]

We should also note that it is customary to posit a locus from the permutation of a proportion, for example, if the first is to the second as the third is to the fourth, then so is [the first to the third as] the second to the fourth. For example, since eight is to four as six is to three (for we have the proportion of double in both cases), it follows that eight is to six as four is to three.[109] And it is true that this locus holds with all measures and measurable things, as are numbers, magnitudes, and times. But it does not hold in this way with others, for if the captain of the ship is similarly related to the ship as the teacher is to the class, it is still not necessary that the ship be related to the class as the captain is to the teacher.

Furthermore, there is a query raised about the loci from proportion, from the greater, and from the lesser, namely, whether they should be said to be extrinsic or intrinsic. And it is well known that Themistius and our author take them to be extrinsic. But it seems that they are intrinsic, for the lesser is included in the greater as the part in the whole, for the part is less than the whole; furthermore, if several predicates are simultaneously affirmed of the same subject, then the subject and the predicates supposit for the same thing or things; and it is on this account that a locus is said to be intrinsic. And the case is similar with the locus from proportion, since it seems to be contained under the locus from similarity, as has been said.

I briefly respond that although it happens that the lesser is included in the greater or that the terms in the locus from similarity supposit for the same, nevertheless this is not necessitated by these loci, for it is possible that one

108. Aristotle, *Topics* I.18.108b13–15.

109. That is, in arithmetical notation, since 8:4 = 6:3; therefore, 8:6 = 4:3.

of two things that in no way include each other is greater than the other, or that the one is similar to the other. And likewise it is not necessary that several terms suppositing for several things supposit for the same; for although 'risible' is to 'man' as 'neighing' is to 'horse', yet 'risible' and 'neighing' do not supposit for the same, and neither do 'man' and 'horse'. But in intrinsic loci it is necessary that one of the aforementioned [conditions] be met, namely, either that the terms should supposit for the same, or that one of the things for which they supposit should be included in the other according to some mode of *being in,* as has been said.

6.5.9 The loci from transumption

(1) According to our author there are two kinds of transumption. The first kind is when a name or an expression has its primary and proper signification and it is transferred to signify something else on account of some similarity, such as the word '[to] laugh' properly signifies emitting a laugh through one's mouth, and it is transferred to signify the same as '[to] flower', for just as laughter signifies joy, so the flowering of plants is joyful for us. And so as well someone who is working in vain is called a plowman working the seashore, for both waste their labor.[110] The other kind of transumption is when a better-known name is taken for a lesser-known one, for they supposit for the same, as when in the place of the name 'philosopher' we take the name 'wise'. (2) The author says, then, that the first kind of transumption pertains to the sophist and not to the dialectician, whereas the second belongs to the dialectician. (3) The locus from transumption is the relation of the better-known name to the less-known, since they supposit for the same. (4) And it holds both constructively and destructively, as in 'A wise [man] is prudent; therefore, a philosopher is prudent'; or thus 'A wise [man] is not envious; therefore, a philosopher is not envious'; maxim: 'Whatever applies to the better known name applies to the less known one, and what does not, does not, for they supposit for the same'.

110. The metaphor of plowing the seashore was a common trope in classical Latin. See Ovid, *Tristia* 5.4.48; Juvenal, *Satirae* 7.1.49. For a discussion of the history of the metaphor of the smiling meadow see I. Rosier-Catach, "Prata Rident," in *Langages et Philosophie,* ed. A. Libera et al. (Paris: Vrin, 1997), pp. 155–76.

The ninth part is about the locus from transumption, and it contains four sections. The first distinguishes two kinds of transumption and expounds the members [of the distinction]; and it is clear enough.

The second section says that the first kind of transumption does not belong to the dialectician. And I believe that this is false. For rhetoric and poetry are parts of dialectic,[111] but this kind of transumption, which is a parabolic way of speaking, maximally belongs to poetry; for it is in this way that we call God a lion in the Holy Scripture, not sophistically but poetically, for just as the lion rules over all other animals, so does God rule over everything; and this is how we refer [in the Apocalypse of John] to 'the animals covered with eyes in front and back'.[112] And such ways of speaking yield dialectical and persuasive arguments. For if someone is called a pig because of his sordidness, he judges himself to be vituperated on account of this sordidness and is moved to abstain from it, and if someone is called a lion because of his act of bravery, he judges that he is praised and is moved to persevere. And these arguments, if they were formally laid out, would appear thus: 'He is brave like a lion; therefore, he is to be called a lion', 'He is sordid like a pig; therefore, he is to be called a pig'. And it is on the basis of such arguments, more often implied than formally expressed, as is common in poetry, that when we want to vituperate or to praise someone, we call him a lion or a pig, or something like this.[113] Therefore, I say that with such arguments we have the locus called 'from tran-

111. As the anonymous referee for Yale University Press has pointed out in connection with this passage: "the Stoics did divide logic into rhetoric and dialectic [see K. Hulser, *Die Fragmente zur Dialektik der Stoiker,* vol. 1 (Stuttgart: Frommann-Holzboog, 1987), pp. 40–55], but the main influence is Arabic logic. Putting rhetoric and poetics in the *Organon* was a well-established tradition among the late Greek commentators of the School of Alexandria, and it won widespread acceptance in the Arabic world: see D. L. Black, *Logic and Aristotle's Rhetoric and Poetics in Medieval Arabic Philosophy* (Leiden: Brill, 1990). For the tradition in medieval Latin logic see C. Marmo, "Suspicio: A Key Word to the Significance of Aristotle's Rhetoric in Thirteenth Century Scholasticism," *Cahiers de 1'institut du moyen-âge grec et latin* 60 (1990): 145–98."

112. See Rev. 4:6: "And before the throne there was a sea of glass like unto crystal: and in the midst of the throne, and round about the throne, were four beasts full of eyes before and behind" (KJV). According to the common medieval exposition of the passage, "the four beasts" are the four apostles who have eyes to see both future and past, both good and evil. I owe thanks to Jack Zupko for providing this solution to the problem of textual corruption in the Hubien text.

113. We would call him, say, an ass, a weasel, a leech, or a maggot. Interestingly, vituperative epithets of this kind appear to be more common in contemporary English than are laudatory ones.

sumption'; maxim: 'We transfer a name that properly signifies something to signify something else on account of some similarity'.

But in terms of the aforementioned transumption we would have a sophistic argument if we were to take a name predicated of something figuratively as if it had been predicated properly, as when we say 'Everything that laughs has a mouth; the meadow laughs; therefore, the meadow has a mouth'; here the conclusion is inferred as if laughter had been attributed to the meadow in its primary and proper signification; nevertheless, we conclude this poetically. And if we call a man a pig, we do not say something false, since we do not take the name properly, but on the basis of similarity to a pig it signifies a sordid man.

Next, in the same second section, the author says that the second kind of transumption belongs to the dialectician. Now I do not deny this, but I say that the locus from this kind of transumption, in the way it was exemplified, was not an extrinsic locus but truly intrinsic, for it held on account of the relation that exists in the course of taking [several] terms for the same [thing]. But the locus from the first kind of transumption is rightly said to be extrinsic, for it proceeds from a term taken properly to the same term taken figuratively, the former and the latter of which, namely, in the antecedent and in the consequent, do not supposit for the same, nor for things of which the one includes the other in some mode of *being in.*

The third section as well as the fourth is still about the second kind of transumption. But about this second kind it has been declared that the locus from transumption is the relation of a term taken properly to itself taken figuratively, or even of an expression to an expression. And it holds constructively and destructively, for it is on account of his being not meek, but cruel, that we conclude that a man is not a lamb, but a lion. And the maxim has been assigned above.

6.5.10 The locus from authority

(1) As taken here, authority is the judgment of the wise or of the expert in some art concerning things that pertain to that art; therefore, Boethius calls this locus 'from the judgment of the thing'. (2) The locus from authority is the relation of the authority itself to what is proved by reference to it. (3) And it holds constructively and destructively, for example, 'The astronomer [*astrologus*] says that the heaven is revolving; therefore, the heaven is revolving', or thus: 'The astronomer says that the sun is not

smaller than the earth; therefore, the sun is not smaller than the earth';
maxim: 'We should believe every expert where his science is concerned'.

The tenth part is about the locus from authority, or from the judgment of the thing, and it contains three sections. The first is the description of authority. But it is described less strictly if we wish to go on to speak more broadly about the locus that philosophers call 'from the judgment of the thing'. For it is not only on the basis of the dictum of the wise that we argue, for just about anybody's dictum is apt to generate an opinion of a plausible sort. For this locus, as Boethius says, is wholly probable, containing no necessity. A probable [or plausible opinion], as is said in bk. 1 of the *Topics,*[114] is that which appears [to be so] to all, or to many, or to the wise, and either to all of these, or to the many, or to the most renowned. Therefore, one may argue from such opinions together or singly by this locus. For example, if we conclude that something is so because this is what is spread by public conversation and gossip, then the argument is from the locus from authority, and it is to be taken as such. Nevertheless, Boethius calls this locus 'artless'; for it is to this [locus] that all persuasions called 'artless' are to be reduced, these being those that Aristotle discusses in bk. 1 of the *Rhetoric,* and of which he says that they are of five [kinds], namely, laws, witnesses, contracts, tortures, and oaths, concerning which that text should be consulted.[115] Therefore, authority in the usual sense, as it is to be taken here, is a condition of the speaker or speakers on the basis of which it is probable that what is said is true; and so of the person or persons who have this condition, we say that they have authority. It is true, however, that sometimes, speaking attributively, we call an 'authority' a proposition stated by such a person or persons; however, authority in its primary and proper sense is declared to be the condition of the person or persons who make such an assertion, which renders what they assert credible.

The second section describes the locus from authority. And the description should be understood so that the locus from authority is the relation of the person or persons who have authority to what he says or what they say.

The third section states that this locus holds constructively and destructively. And this is true. Nevertheless, some people say that it does not hold negatively, given that this argument is not valid: 'Aristotle does not say that there is an agent sense; therefore, there is no agent sense', for nobody, however wise, can write or say everything that can be written or said about this science. And it is true that it does not hold negatively in this way, namely, by arguing from not saying something. But destructively, namely, in inferring a negative conclusion, it is indeed valid, on the basis of someone's saying some-

114. Aristotle, *Topics* I.10.104a9–10.

115. Aristotle, *Rhetoric* I.15.1375a22–24.

thing; for example, 'He says that this is not so; therefore, it is not so'. And the common maxim is 'We should believe the person or persons who have authority'.

6.5.11 Some other loci, which are not listed by the author

(1) Now we have to go on to talk about some extrinsic loci mentioned by some authors but which our author does not seem to have named, such as the locus from disparate [terms] [*a disparatis*], the locus from addition [*ab appositione*], and the locus from removal [*ab ablatione*], all of which Aristotle often mentions in the *Topics.* (2) Disparate terms are those that can never, whether simultaneously or successively, be verified of the same and for the same, as are 'man' and 'donkey', and 'whiteness' and 'blackness'. The locus from disparate [terms] is the relation of one of the disparate [terms] to the other. And it holds destructively, for example: 'Socrates is a man; therefore, he is not a donkey', or 'This color is whiteness; therefore, it is not blackness'; maxim: 'Of whatever one of the disparate [terms] is truly verified, of the same the other is truly denied'. (3) The locus from addition is the relation of that to which something is added and that which results to that which is added. And it holds constructively, for example: 'B, to which A was added, was not white, and the resulting whole is white; therefore, A was white'; maxim: 'When something added to something else renders the whole such and so, it was itself such and so'. Or one can argue thus: 'B, to which A is added, was white, and the result is whiter; therefore, A was white'; maxim: 'When that which is added to something else renders it more such and so, it was itself such and so'. (4) The locus from removal is the relation of that from which something is removed and that which remains to that which is removed. And it holds constructively, for example: 'B, from which A is removed, was white, and what remains is not white; therefore, A was white'; maxim: 'When after removing something the remainder is not such and so, then that [which was removed] was such and so'.

This is the last part of this chapter, and it contains four sections. The first propounds what in this part is to be determined, and is clear enough.

The second deals with the locus from disparate [terms]. And this locus can be reduced to the locus from contraries, for it holds just as the locus from con-

traries does, namely, destructively, going from the affirmation of one to the negation of the other. But there is a difference between contraries and disparate [terms], for properly contrary terms have to be able to be affirmed of the same and for the same successively but not simultaneously, whereas disparate terms never [are affirmed of the same and for the same], namely, neither simultaneously nor successively.

But there is an objection to this locus. For 'white' and 'sweet' are disparate terms, and so are 'double' and 'son', yet this does not follow: 'This is white; therefore, this is not sweet', or 'This is double; therefore, this is not a son'. And it is altogether apparent that terms of diverse categories are disparate, especially the abstract ones, as are 'magnitude', 'shape', 'action', and 'passion'; but still, this does not follow: 'This is a magnitude; therefore, this is not a shape', or 'This is action; therefore, this is not passion'.

Solution: I reply that, broadly speaking, terms are called 'disparate' because neither of them is opposed to, or follows from, the other. And this locus is not valid with all sorts of disparity, as has been correctly argued. But in a second, and incorrect, way, terms are called 'disparate' because neither of them can be predicated of the other quidditatively, although this can be done denominatively, and this is the way in which the terms of diverse categories are disparate. And with this kind of disparity this locus still does not have to be valid. In the third way, and properly, terms are called 'disparate' in the way disparate terms were described in the text, and it is with respect to these that the locus described was valid.

The third section concerns the locus from addition, and there are several objections to it. For water added to quicklime makes it hot and boiling, although it was not hot. There are also powders both of which are white, but when they are both thrown into water, the whole becomes very black. Again, whiteness added to a man renders him white, yet whiteness was not white. Again, something most white added to something most black makes the whole gray or pallid, although neither was gray or pallid; and blue added to yellow makes the whole green.

I briefly respond that the maxim 'When something added to something else renders it such and so, it itself is or was such and so' needs to be modified. First, as for the form that comes to the subject, it is not necessary that it be such as it renders the subject, but it is necessary that it be such or a suchness [*talitas*], for example, when something added to something else renders it white, then it is white or a whiteness, and if it renders it good, then it is good or a goodness.[116] Second, if a body is added to a body and the whole be-

116. Buridan's point seems to be that if x added to y renders y an F, then x does not have to be an F, but x has to be either an F or an F-ness. For instance, when whiteness is added

comes suchlike with respect to one of the primary qualities[117] that neither of them exemplified before, this is so because one of them was virtually such, but not formally, and the other was susceptible to it. For this was the case with the quicklime, since it was virtually hot.[118] Third, if from this addition of bodies there arises a color that neither of them had before, as was described in the case of the powders and the water from the mixing of which there results something black, this is so because from the action and passion of the primary qualities with regard to each other according to the diverse proportions there arise diverse secondary qualities, as for example diverse colors, flavors, etc.; therefore, none of those three in itself, nor two of them without the third, were of such a proportion in the primary qualities as to produce blackness, but those three together were fittingly proportioned; therefore, none of them in itself was of this sort [namely, black], either formally, or virtually, but those three taken together were virtually of a sort such as the whole is rendered by their mixture.

Again, let us assume that one body is added to another by mixing, and that these bodies were informed [*disposita*] by extremely contrary active qualities; then it comes about that the resulting whole will have an intermediate quality, as when from the hottest and the coldest there results a lukewarm mixture. Here it does not follow that either of them was lukewarm, but that each of them was of a sort that it made the other approach. For the hottest makes the coldest approach being hot, for it was hot, and thus in the other direction the coldest makes the hottest approach being cold, for it was cold. But if one of them dominates, then it will make the whole of a sort such as it was, namely, either entirely such, or so that, absolutely speaking, it is denominated as being such. But if there is a mixture that comes about by the mingling of tiny parts, without any interaction [*sine actione et passione*] of the mixed [components], then the whole will look as though it were of an intermediate quality, or of the quality of the component that dominated, as if they had interacted in the way just described.

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to a subject, then what is added is not white, since whiteness is not white, yet it is a whiteness, so with this disjunctive clause the rule holds even for the cases of adding forms that denominate their subject by the concrete terms appellating them but that themselves are not denominated by these terms.

117. Obviously, Buridan has in mind the primary active and passive qualities of the elements of Aristotelian physics, namely, hot, cold, wet, and dry.

118. Of course, 'virtually' *(virtualiter)* has a special technical meaning here. In this sense, something is said to be virtually F if it has the power *(vis,* or *virtus)* to cause something to be F (under the appropriate circumstances), but it is not F, whereas something is formally F if it is F.

The fourth section is about the locus from removal, and it is to be expounded analogously to the section about addition.

But it is quite right to query whether these loci are to be called extrinsic or intrinsic or intermediate. And I believe that in accordance with the distinction of loci given above, these loci, the ones from addition and removal, deserve to be called intermediate loci. For the locus from addition does not hold only on the basis of the relation of that which is added to that to which it is added, or conversely (in which case it would be an extrinsic locus), nor does it hold only on the basis of the relation of the resulting whole to that which is added or to that to which the addition is made (in which case it would be an intrinsic locus, of the whole to the part or conversely), but rather it holds on the basis of both of these relations simultaneously; and thus it would appear to be an intermediate locus and is similar to the locus from division.

6.6 Chapter 6: On intermediate loci

6.6.1 The aim of the chapter

> Next, we discuss intermediate loci, which our author lists and classifies as being such that some are from the conjugates [*a conjugatis*], some from cases [*a casibus*], and some from division [*a divisione*].

The sixth and last chapter of this treatise is about the intermediate loci. It contains four parts. The first propounds the aim of the chapter and enumerates the intermediate loci. The second discusses the locus from conjugates, the third the locus from cases, and the fourth the locus from division.

The first part is clear enough, although we should take note of the fact that the foregoing lists of loci, intrinsic as well as extrinsic or intermediate, do not purport to be exhaustive, so as to eliminate the possibility of listing other loci, intrinsic as well as extrinsic or intermediate; rather, they are propounded in this way because the loci that are listed are the principal ones, namely, those that dialecticians tend more willingly and more often to use.

6.6.2 The locus from conjugates

(1) 'Conjugates' is the name covering an abstract [term] and its concrete [counterpart], as are 'humanity' and 'man', 'whiteness' and 'white'. (2) The locus from conjugates is the relation of one of the conjugates to the other. (3) It holds constructively and destructively, for example, 'Justice is good; therefore, [something] just is good', or 'Injustice is not good; therefore, [something] unjust is not good'; maxim: 'What applies to one of the conjugates applies also to the other, and what does not apply to the one does not apply to the other either'.

The second part is about the loci from conjugates, and it contains three sections. The first tells what items are called 'conjugates' and the second describes the locus from conjugates. And these two sections are clear, for it is obvious that the loci from conjugates can proceed from an abstract [term] to the concrete one, as in '[A] whiteness is a color; therefore, [something] white is colored', or from a concrete to the abstract [term], as in '[Something] white is colored; therefore, [a] whiteness is a color'.

The third section shows how this locus is valid and then exemplifies it and provides the maxims. And it is quite clear that these maxims are not correctly formulated, for it does not follow that if whiteness is a color, then something white [*album*] is a color, nor does it follow that if a white thing [*album*] is a man, then [a] whiteness is a man; therefore, it is not true to say that whatever is predicated of one of the conjugates is predicated of the other. Therefore, this locus is not valid with respect to the predication of the same term of both conjugates, but it is valid as a ground for inferring the predication of the concrete of the concrete on account of the fact that the abstract is predicated of the abstract, or conversely, for example: 'Justice is a virtue; therefore, someone just is virtuous', or '[Something] white is colored; therefore, [whiteness] is a color'. And the maxim seems to be: 'If the abstract [term] is predicated of the abstract [term], then the concrete [term] is also predicated of the concrete [term] and conversely'. And it is certain that this locus always holds affirmatively, [proceeding] from the abstract [terms] to the concrete ones. Therefore, this is an absolutely valid maxim: 'If the abstract is truly affirmed of the abstract, then so is the concrete of the concrete'. Therefore, this locus also always holds negatively, [proceeding] from the concrete to the abstract [terms], as in 'Something white is not sweet; therefore, [a] whiteness is not [a] sweetness', or even universally, 'Nothing white is sweet; therefore, no whiteness is a sweetness'; so this is an absolutely valid maxim: 'If the concrete is truly denied of the concrete, then so is the abstract of the abstract'.

But this locus is not always valid from the abstract to the concrete [terms] negatively, nor does it hold in the other direction affirmatively. For this is not

valid: '[A] humanity is not [a] color; therefore, a man is not colored', or '[A] whiteness is not [a] sweetness; therefore, [something] white is not sweet'; it is similarly not valid in the other direction: 'A man is colored; therefore, a humanity is a color', or '[Something] white is sweet; therefore, [a] whiteness is [a] sweetness'.

It is true, however, that this locus is valid from abstract to concrete [terms] affirmatively as well as negatively when essential predicates are involved. For this is indeed valid: '[Something] white is colored; therefore, [a] whiteness is a color', for the reason that in the antecedent we had essential predication. Therefore, if you wish to concede the following maxim: 'If the abstract is predicated of the abstract, then so is the concrete of the concrete', then you have to add the condition 'if the predication is essential'. Therefore, in proceeding from concrete to abstract [terms], the locus is not valid affirmatively where a problem of simple inherence is in question, but it is valid where a problem of genus is in question, or so as to prove that the predicate is predicated of the subject essentially. And the maxim will be 'If the concrete is the genus of the concrete, then so is the abstract of the abstract, and conversely', or thus: 'If the concrete is essentially predicated of the concrete, then so is the abstract of the abstract, and conversely'.

But then there arises the question as to why such a locus should be said to be intermediate. For it seems to coincide with the locus from the formal cause; this is because the locus from the formal cause proceeds from the abstract to the concrete, as in '[A] whiteness is; therefore, [a] white [thing] is'; but the locus from the formal cause is intrinsic; therefore, so is this.

To this it is responded that the consequence from the locus from the formal cause holds only on the basis of the relation of agreement, i.e., because of the inclusion of the effect in the cause. Therefore, the same predicate that was predicated of the name of the cause is concluded about the name of the caused thing, as in the case of the predicate 'is'. But in this locus the consequence holds both on account of the relation of agreement between the abstract and the concrete [term] and also on account of the relation of agreement in the mode of signification; therefore, it is not the same predicate that is inferred [to be predicated] of the concrete as the one that was predicated of the abstract, but rather one that agrees and differs, even as the abstract and the concrete agreed and differed; for just as the abstract was predicated of the abstract so also the concrete is inferred [to be predicated] of the concrete, and conversely.

But then there is an objection: for Boethius and our author posit examples inferring the same predicate, such as this: 'Justice is good; therefore, [something] just is good'. And I reply that the example has not been correctly given, since it only holds because in these cases the concrete [term] is verified of the abstract [term]. For every goodness is good; therefore, in this example

'good' can be taken for a goodness. And so this is correctly concluded in the other direction: '[Something] just is good; therefore, [a] justice is good', for it is a goodness, which is good. This, however, would not be thus concluded: '[Something] white is colored; therefore, [a] whiteness is colored'.

6.6.3 The locus from cases

> 'Cases' here applies to the concrete name and the adverb deriving from it, or perhaps several concrete [terms] predicated denominatively [deriving] from the same abstract [term], for example, 'just' and 'justly'. The locus from cases is the relation of one of the cases to another. And it holds constructively and destructively, for example, 'That which is just is good; therefore, that which happens justly happens well', or 'That which is unjust is not good; therefore, that which happens unjustly does not happen well'; maxim: 'A case and the case corresponding to it are related analogously'.

The third part is about the locus from cases. And it is quite clear that the locus from cases comes the closest to the locus from conjugates. Therefore, just as has been said in connection with the locus from conjugates, so I say [here] that the locus from cases should hold not in accidental predications but only when the predication of the abstract [term] of the abstract [term] from which those cases are derived is quidditative. Therefore, since cutting [*sectio*] is acting [*actio*] by quidditative predication, it follows that to cut [*secare*] is to act [*agere*], and a cutter [*secans*] is an agent [*agens*], and what is cutting [*secativum*] is active [*activum*], and to be related cuttingly [*secative se habere*] is to be related actively [*active se habere*], and in each of these cases we have essential predication; and the same follows in every other such case.

But this does not follow in accidental predication. For if [someone] strong [*fortis*] is liberal [*liberalis*], it does not follow that to act strongly [*fortiter*] is to act liberally [*liberaliter*], and if [something] white [*album*] is sweet [*dulce*], it does not follow that to become white [*albefieri*] is to become sweet [*dulcefieri*]. Therefore, these loci modified in this manner are probable.

6.6.4 The locus from division

(1) Division, as taken here, is the partition of one term into several terms. (2) The locus from division is the relation of a term divided and one of the terms dividing it to the others. (3) And it holds constructively, namely, going from the destruction of one of the dividing terms to the construction of the other, as in 'A is an animal and is not rational; therefore, it is irrational'; maxim: 'Of whatever the divided [term] is predicated, of that some one of the dividing terms is also predicated'.

The final part is about the locus from division, and it contains three sections. The first is the description of the sort of division relevant here. Concerning this point we should realize that a division in the strictest sense would be the division of an integral whole by means of the real separation of its parts from each other, as when we cut or break a stone or a stick into several parts; but this is not the relevant sense in the present context. In another sense the name 'division' is narrowed down, or transferred, so as to allude to significative terms suppositing for several things, not so that such a term would be divided into its integral parts, but so that it is divided into other terms with respect to its signification or supposition, in the sense that the term that is divided or is divisible supposits for many, and the dividing terms also supposit for them, neither of them for all, but rather one of them for some and the other for the rest. Thus, therefore, with respect to supposition, there is a partition of a common term into several less common terms in such a way that one of those less common terms supposits for one part of the things [taken together][119] that the common term supposits for, and the other for the other part of them, given that the division is exhaustive, this being the only sense in which we take it here. It is then necessary that the dividing terms [together] supposit for all the things for which the divided term supposits, but neither of them does so for all. For it is in this manner that we divide 'animal' into 'rational' and 'irrational', when we say that some animals are rational and others irrational.

And we should note that the divided term should be truly predicated of any of its dividing terms, as when, for example, [what is] rational as well as [what is] irrational is an animal. And again the dividing terms should be [truly predicated] disjunctively, and indeed, universally, if the division is exhaustive, for example, every animal is either rational or irrational.

The second section describes the locus from division. And from this description it is clear that this locus has to be said to be intermediate; for when

119. That is, not some integral part of each but some part of the collection of these supposita, i.e., several but not all supposita, each of which is taken as a whole.

I say 'A is an animal and is not rational; therefore, it is irrational', then two relations concur to imply the conclusion. The first is the relation of applicability [*convenientia*], namely, that of 'animal' to 'rational' and 'irrational', this being the relation of the superior [term] to the inferior [term]; and then there is a relation of inapplicability [*disconvenientia*], namely, that of 'rational' to 'irrational'. But neither of these relations in itself would be sufficient to imply the conclusion. For this is not valid: 'A is an animal; therefore, A is rational', nor is this: 'A is not rational; therefore, A is irrational', here taking 'irrational' as a positive difference of 'animal'.[120]

I add this condition because if 'irrational' were taken in the place of the infinite name 'non-rational', then not only would 'animal' be divided by 'rational' and 'irrational', but also even 'being', in its whole generality; for every being is rational or non-rational. And then for the purpose of concluding that A is irrational, i.e., non-rational, the premise 'A is an animal' is irrelevant. Indeed, assuming the constancy of terms, this is valid: 'A is not rational; therefore, A is irrational', i.e., 'non-rational',[121] and the locus would be the one that was provided about contradictories and would be extrinsic, rather than intermediate.

Furthermore, on account of the second as well as the third section, we should note that sometimes a division into two members is not exhaustive, but rather it is necessary to posit more members, for example: 'Of the planets[122] one is the moon, another is the sun, another is Mercury, another is Venus', etc. And then to conclude constructively [so as to finish up with only] one member, we have to deny all others, as in 'A is a planet, and it is not the moon, nor the sun, nor Mercury, nor Venus, etc.; therefore it is Saturn'. Therefore, in this case, the locus from division is the relation of the divided term and all dividing members except one to that single one. And the maxim is the same as before, namely, 'Of whatever the divided [term] is predicated, of that some one of the dividing terms is also predicated'.

But some people say that the locus from division is not to be counted among the dialectical loci, given that an argument based on it is a formal[ly valid] consequence. But to maintain [the opinions of] Boethius and Themistius and our author, and generally everybody else who has listed this locus among the

120. For then 'A is irrational' implies that A is an animal, which 'A is not rational' does not imply; and so if A is a stone, then the antecedent ('A is not rational') of the consequence is true, but its consequent ('A is irrational') is false.

121. The assumption of the constancy of terms is needed because the negative antecedent would be true even if there were no A, whereas in that case the affirmative consequent with the infinite predicate would be false.

122. The "planets" as Buridan interprets this term are all the heavenly bodies that change their relative position in the sky as observed from the earth, as opposed to the fixed stars. This is why the sun and the moon are on the list.

dialectical loci, I say that the following is an argument from division: 'A is an animal and is not rational; therefore, it is irrational'; and this consequence is not formal[ly valid], but it would indeed be rendered formal[ly valid] by adding the proposition 'Every animal is rational or irrational'.

But this does not matter, for this is so even where other loci are concerned. For if we argue by the locus from contraries in the following manner: 'A is white; therefore, A is not black', it is clear that a syllogism, or a formal[ly valid] consequence, would be effected by the addition of the proposition 'Nothing white is black'. And the same goes for the other dialectical loci: if they are not laid out in [a syllogistic] form, they do not conclude on account of their form; but they can be reduced to [a syllogistic] form by means of additions.

Again, we should note that Boethius and our author seem to want this locus to hold destructively, namely, from the affirmation of one of the dividing [terms] to the negation of the other, as in 'A is an animal and is rational; therefore, it is not irrational'. But it seems to me that, as far as the present issue is concerned, terms that divide another term are sometimes such that they never coincide in suppositing for the same; e.g., when we divide 'animal' by 'rational' and 'irrational' or by 'healthy' and 'sick'; and then, as far as the non-coinciding supposita are concerned, it is not necessary to include the divided term in the argument, but it is sufficient to say 'It is rational; therefore, it is not irrational', or 'It is healthy; therefore, it is not sick'. And then we do not have the locus from division here, nor is it an intermediate locus, but rather a locus that is absolutely extrinsic, namely, [the locus] from opposites or from disparate [terms].

But otherwise the dividing terms are such that although they do not coincide with respect to the concepts by means of which they signify what the divided term signifies, they do nevertheless coincide in suppositing for the same [things]. And this is how Aristotle, in bk. 2 of the *Ethics*,[123] divides 'good' into 'noble' [*honestum*], 'pleasant' [*delectabile*] and 'advantageous' [*utile*], and yet the locus would not be valid from the affirmation of one of the members to the negation of the other or of the others; for this is not valid: 'Happiness is pleasant; therefore, it is not noble' or '[therefore, it is not] advantageous'.

123. Aristotle, *Nicomachean Ethics* II.3.1104b30.

Treatise 7
On fallacies

7.1 Chapter 1: General remarks

7.1.1 The description of real elenchus and sophistic elenchus

> (1) Turning now to sophistic elenchi and the fallacies they are naturally liable to generate, we preface this treatise with some general remarks concerning them. We may say, therefore, that an elenchus is a syllogism demonstrating the contradictory of the position of the respondent. (2) A sophistic elenchus, however, is an expression that appears to be an elenchus, but is not. (3) Now the cause of illusion [*causa apparentiae*] in a sophistic elenchus is that in which it agrees with a genuine elenchus; (4) and the cause of not-being [*causa non existentiae*], or defectiveness, is the failure to meet some condition required in a genuine elenchus.

This is the seventh treatise of this work, and it deals with fallacies that arise by sophistic arguments. I will divide it into six chapters. The first will contain some general preliminary remarks, the second will deal with the classification and number of fallacies, the third will be about fallacies of words [*in dictione*] in particular, the fourth about the fallacies apart from words [*extra dictionem*],[1] the fifth about the modes of arguing for the sake of diverse tactical goals [*modis ducendi ad diversas metas*],[2] and the sixth about the solutions of sophistic arguments.

The first chapter will have seven parts. The first describes both real elenchus and sophistic elenchus; the second will describe the art of sophistry; the third will describe disputation; the fourth will list the genera of disputation; the fifth will describe the tactical goal [*meta*]; the sixth will provide the number of such goals; and the seventh will describe fallacy.

The first part contains four sections. The first is the description of elenchus, along with a statement of the aim [of this treatise]. An elenchus is presented to refute [*ad redarguendum*] a respondent or someone holding a false opinion. But a refutation [*redargutio*], properly speaking, comes about only by means of a necessarily conclusive argument that generates belief, although sometimes it may appear to come about otherwise. Of [all the forms of] argumentation, however, only a syllogism is necessarily conclusive on account of its form, as was said elsewhere.[3] Therefore it is necessary that every elenchus properly so called be a syllogism, and not just any kind of syllogism, but one that proves

1. For the distinction and terminology see 7.2.1.
2. For the definition of *meta* see n. 15 below.
3. See 5.1.3.

the contradictory of the conclusion of the respondent of; for no respondent would be refuted by a syllogism proving nothing against him. Hence it is clear that the description of elenchus was correctly given. Now the description of elenchus given here is restricted to syllogistic argument, not because a sophist only uses syllogisms (for he uses whatever argumentation he deems advantageous for himself in order to appear to defeat the respondent), but because, aiming above all to appear to refute, he aims above all to appear to produce an elenchus.

The second section describes sophistic refutation in terms of appearance [*apparentia*] and not-being [*non existentia*], since 'sophistic' means the same as 'deceptive'. For we are deceived only by some false appearance, that is to say, by believing an appearance, even though the thing is not as it appears to be.

The third and fourth sections show the causes of appearing to be an elenchus and not being an elenchus; they will be clarified later in the course of the specific discussion of each fallacy.

7.1.2 The art of sophistry

> Sophistry is the art by which an opponent is able to appear to defeat a respondent by the strength of his own argumentation, although he does not do so, and by which the respondent is able to resist the opponent so that the opponent neither defeats him nor appears to do so.

The second part describes the art of sophistry, in accordance with which artful disputations come about, using sophistic argumentations, by means of which neither knowledge is obtained, nor opinion produced. Therefore, by means of a sophistic disputation sophists do not intend to become wise, but they do intend to appear to be wise. Now of these persons Aristotle says that for some it is more important to appear to be wise while not being so, than to be wise while not appearing to be so.[4] For they appear to be wise who appear to perform the works of the wise, while not doing so.

There are, insofar as the present discussion is concerned, two works pertaining to the wise, as Aristotle says: not to lie, and to be able to expose a liar.[5] This means not putting forth a false position, but a true one, and being able to uphold that true position against one's opponents by solving their opposing arguments, while being able to disclose the liar, i.e., being able to refute a false

4. Aristotle, *On Sophistical Refutations* I.165a20–21.

5. Ibid., I.165a24–27.

position by proving the opposite truth. With respect to the first work, then, a respondent appears to be wise by means of the art of sophistry if he is able to solve the arguments of his opponent in such a manner that that opponent does not seem to defeat him; but with regard to the second work the opponent appears to be wise by means of the art of sophistry if by his sophistic and subtle arguments he seems to defeat the respondent, who is unable to solve those sophistic arguments; for in this way he seems to show that the respondent has put forward a false position. It is obvious, therefore, that sophistry is correctly described in terms of these two works, whereby it simulates wisdom, and by which in turn the sophist himself simulates the wise; and this is why Aristotle says that sophistry is apparent as opposed to real wisdom.

There is some doubt, however, as to whether sophistry should truly and properly be called an art, as is laid down in the description given above. For it seems that it should not, given that sophistry is deceptive, and may state and lead us to a false conclusion, whereas art, prudence, knowledge, understanding, and wisdom are not deceptive but are intellectual virtues, by means of which one may not state something false, as is said in bk. 6 of the *Ethics*.[6]

My reply is that if by 'sophistry' you wish to understand a habit of assent concerning conclusions acquired by sophistic argumentations, so that one believes that they are true argumentations because of an incapacity to solve them, then that habit, doubtless, is neither art, nor prudence, nor understanding, nor knowledge, nor wisdom, but an erroneous habit that is the opposite of some one of the intellectual virtues just mentioned. But if by 'sophistry' we understand a habit [*habitus*] on account of which we can aptly and promptly construct and also dissolve sophistic argumentations with subtlety concerning any subject, then that habit is without a doubt a beautiful and very useful art. It is so, in the first place, for the wise or for those who desire wisdom, lest they be impeded from the contemplation of truth by getting entangled in such argumentations; for, as Aristotle says, "experts and entirely knowledgeable persons are sometimes confounded even by ignorant persons who use such arguments."[7] Second, it is useful for fools who seek glory in apparent wisdom; for by this art they appear to be wise, although they are not wise. For this art is not wisdom but a part of logic; but it seems to be wisdom,

6. See Aristotle, *Nicomachean Ethics* VI.6.1141a3–8.

7. Aristotle, *On Sophistical Refutations* 6.168b6–7. Here I used J. Rustenburg's critical text (in progress): *Artifices et omnino scientes* [*hiis argumentationibus aliquando*—inserted from the apparatus—GK] *ab insciis arguuntur.* The Hubien text has the following rather misleading reading: *Artifices et omnes scientes his argumentationibus, aliquando etiam inscii arguuntur.* In the translation of W. A. Pickard-Cambridge: "It is, however, just in this that the experts and men of science generally suffer refutation at the hand of the unscientific." See 7.1.7 n. 22.

because it has some similarity to wisdom, which is first philosophy, namely, metaphysics, insofar as they both deal with all the terms of all the sciences, but metaphysics by means of true demonstrations, and sophistry by means of sophistic argumentations, in the manner of speaking used by Aristotle in bk. 4 of the *Metaphysics,* when he says: "for dialectic and sophistry take on the same shape for the philosopher, since both sophistry and dialectic deal with the same genus as philosophy, namely, being in its total generality, but they differ; for sophistry, insofar as it teaches to construct and dissolve sophistic arguments, deceives nobody, and does not state falsity; however, insofar as it uses its artistic trickery, it is apt and able to deceive even the wise, should they not be well trained in this art."[8]

7.1.3 The description of disputation

> A disputation is an argumentative act of one [person] with another so as to obtain the end [*finis*] of the argumentation.

The third part describes disputation, because that is what dialecticians and sophists are mostly engaged in. And 'act' is included in this description as the genus of disputation. And by 'argumentative' the instrument is indicated by which that act is exercised. And by 'one with another' the disputants are indicated, who should be at least two, namely, the opponent and the respondent, or the teacher and the student. And 'so as to obtain the end of the argumentation' is added because every agent, whether it acts by nature or by art, intends a definite end.

8. See Aristotle, *Metaphysics* IV.3.1004b17–26. The Latin is a paraphrase of the Greek and may be corrupt. Hugh Tredennick's fairly literal translation of the Greek reads: "Dialecticians and sophists wear the same appearance as the philosopher, for sophistry is Wisdom in appearance only, and dialecticians discuss all subjects, and Being is a subject common to them all; but clearly they discuss these concepts [lit.: things] because they pertain to philosophy. For sophistry and dialectic are concerned with the same class of subjects as philosophy, but philosophy differs from the former in the nature of its capability and from the latter in its outlook on life. Dialectic treats as an exercise what philosophy tries to understand, and sophistry seems to be philosophy, but is not."

7.1.4 The genera of disputation

(1) There are four kinds of disputation, namely, doctrinal, dialectic, examinatory, and litigious. (2) Doctrinal disputations are those that argue from the proper principles of each discipline; (3) dialectical disputations are those that settle contradictions [by arguing from] probable principles; (4) examinatory disputations are those that [argue from principles that] appear to the respondent [to be true] and that those who claim to have knowledge must know; (5) whereas litigious, or sophistic, disputations are those that syllogize from [principles] that appear to be, but are not, probable; thus speaks Aristotle.[9]

In the fourth part the kinds of disputations are listed and described in five sections. The first enumerates the four kinds of disputation: for every disputation comes about either by probative or at least apparently probative argumentation; and every such argumentation is either a demonstration, in which case the disputation is doctrinal, or dialectical, in which case the disputation is dialectical, or examinatory, in which case the disputation is examinatory, or sophistic, in which case the disputation is sophistic, which Aristotle calls 'litigious'.[10] Now rhetorical argumentation is comprised within dialectical, whence rhetoric and poetics are parts of dialectic, as Aristotle says[11]—and so also rhetorical disputation is comprised within dialectical.

These kinds of disputations differ in the diverse ends intended by the disputants. For a doctrinal disputation is directed toward generating knowledge in the student concerning the point to be established, and this is the aim of both disputants, namely, of the teacher and of the student. Dialectic, however, when applied in speculative [matters] or [utilized] in a speculative manner, is directed toward opinion; for both disputants aim at acquiring an opinion about the point of the discussion; they take contradictory stances, and each of them should produce probable arguments for his position, if he has any. He should also solve his opponents' arguments, if they also have probable solutions—and not in a litigious manner, just in order to win, but in order that both of them should assent, in agreement with each other, to the position that they have seen to have been supported in the disputation by more probable and less soluble arguments; and if they do otherwise, then they slip into a sophistic disputation, which often happens. Now there are other specific ends in rhetorical disputations, and these should be discussed in connection with the *Rhetoric.* The end of an examinatory disputation is to check on the knowl-

9. See Aristotle, *On Sophistical Refutations* 2.165a38–b8.

10. Ibid.

11. For more on this issue see 6.5.9 n. 111.

edge or ignorance of the respondent. Finally, the end of a sophistic disputation was sufficiently characterized in the second part of the present chapter.

Aristotle calls sophistic disputations 'litigious', 'pugnacious', 'competitive', and 'bellicose' because of their similarity to rhetorical disputations in lawsuits. For just as the accuser and the defendant intend contrary ends, namely, both their own profit and the condemnation of the other, and for this sake they start a fight with each other, and hostility and controversies, so also do those who dispute in a sophistic manner, for they intend contrary ends, each his own exaltation above the other and the suppression of the other, namely, to appear wiser than the other.

The other four sections describe the aforementioned four kinds of disputations with reference to some of their properties. For it is a property of doctrinal disputations to proceed from proper principles [*principia propria*], insofar as the subject matter permits, because they use as powerful demonstrations as possible; but the most powerful demonstrations proceed from proper principles, as is clear from bk. 1 of the *Posterior Analytics*.[12]

Again, it is a property of dialectical disputations that they syllogize from probable principles toward both parts of a contradiction, namely, one party toward one part and the other toward the other, as was said above; and this cannot happen in a demonstrative or doctrinal disputation.

Again, it is a property of an examinatory disputation to dispute about things that appear true to the respondent, and about general principles, primarily, indeed, about general principles as they must be presupposed in the art or science that is the subject matter of the examination. For although these can be known without knowing the specifics, if they are not known, then no more specific points can be known; whence, if the respondent is found not to know these, it is immediately obvious that he is not acquainted with the art. But if the respondent is doing well concerning such general principles, we should move on to more specific points, to check on whether he has [sufficient familiarity with] the art or science [to respond]; however, we should not move on to just any specific point, but only to those that appear true to the respondent; for it often happens that someone familiar with an art or science does not have on hand a prompt recollection of every particular conclusion. When, therefore, the respondent has claimed to have knowledge or recollection of a particular conclusion, we should see whether he knows how to demonstrate it from its proper principles, as well as how to eliminate the relevant objections and to solve the opposing arguments. For if he knows these, then we will have verified that he has sufficient knowledge of that art or science. But the exam-

12. Aristotle, *Posterior Analytics* I.2.71b22–23.

iner is allowed to move from one point to another, since gaining a thorough impression requires that this appear to be the case not only concerning a few points but concerning many. Thus it seems to me that an examinatory disputation is a sort of composite or aggregate of dialectical and demonstrative disputation, i.e., of dialectical disputation where common principles are concerned, to test for ignorance, but of demonstrative where proper principles are concerned, to test for knowledge. But Aristotle seems to place examinatory disputations under dialectical rather than under demonstrative disputations, since an examinatory disputation should start from general principles.

The property of sophistic disputation is that it syllogizes from principles that are apparently but not really probable, as Aristotle says.[13] But it seems that this is in need of explanation, as has been said. For more often than not, sophistic argumentations apply probable premises, or perhaps even necessary and manifest ones, but they are not syllogistic, for they fall short of a syllogism in many respects. This is why it is necessary to attribute such apparent but not real probability not only to the premises of sophistic argument but also to the consequence and the contradiction [between the premises and the negation of the conclusion].[14] A sophistic disputation therefore proceeds to the position of the respondent from premises, consequences, or contradictions that are apparently, but not really, true or probable.

Further, we should not say that these are strictly speaking definitions of these kinds of disputation, but it is sufficient if they are taken to be descriptions of some of their properties.

7.1.5 The description of tactical goal [meta]

> The *meta*[15] in a sophistical disputation is the unacceptable [position] into which an opponent strives to drive the respondent but without striving to conclude against him.

The fifth part describes the meta. Strictly, the *meta* is the end or termination of a road, a square, a street, a district, or the like. But figuratively, 'meta' signifies the end intended by a sophist to the disadvantage of the respondent.

13. See Aristotle, *On Sophistical Refutations* 2.165b7–8.

14. For the justification of the supplementation see Buridan's discussion of the *causa non existentiae* in a sophistic argument below.

15. Originally, the finishing line of the racecourse in the ancient circus; hence, the goal, the end, in general.

A single operation, however, often has several or many ends, of which some are subordinate to others, as Aristotle teaches in bk. 2 of the *Physics*.[16] The end principally and ultimately intended by the sophistic opponent is the glory of appearing to be wise, and for the sake of this he intends to appear to defeat the respondent in disputation, an appearance produced by driving him into an unacceptable position or concluding something unacceptable against him.[17] And thus the proximate end intended by the sophist is this, namely, to drive the respondent by the force of his arguments into a manifestly unacceptable position. Therefore the name *meta* is used to signify such an unacceptable position in a sophistic disputation, i.e., that into which the opponent intends to drive the respondent; and this accords with the definition.

7.1.6 The number of metas

(1) There are five such metas, namely, refutation, falsehood, implausibility, solecism, and redundancy [*nugatio*]. (2) The meta of refutation is the denial of what was previously conceded, or the concession of what was previously denied, by force of argument in the same disputation. (3) The meta of falsehood is the concession of something obviously false. (4) The meta of implausibility is the concession of a position that goes against the common opinion of professors or against the opinion of some, or all, or most famous professors. (5) The meta of solecism is the concession of some faulty expression that breaches the rules of grammar. (6) The meta of redundancy is the concession of some redundant locution. (7) And you should add to the description of any of these metas the phrase: 'by force of argument'.

The sixth part enumerates and describes the five metas of sophistic disputation. It has seven sections. The first is their enumeration, and is obvious.

The second provides the description of the meta of refutation, which is the meta primarily and principally intended by the sophist, because it is the most evidently unacceptable position, given that the concession of contradictories goes directly against the first and firmest complex principle. Thus the phrase

16. Aristotle, *Physics* II.8.199a8–9.

17. That is, the sophist may conclude to something that is unacceptable to the respondent, but he does not need to conclude to the position genuinely opposite to that of the respondent, which is why in the main text Buridan can say: "without striving to conclude against him," i.e., without striving to establish the truth of the opposite position.

'by force of argument' is added in the description, because otherwise no reward or glory would be ascribed to the opponent, whereas this is what he principally intends. So if the respondent spontaneously says: "I have sufficiently upheld this position, but now, for the sake of the disputation I wish to uphold the opposite position," he is not disproved. Also, 'in the same disputation' is added, because if some things were asserted elsewhere, those have already passed away, and they are not relevant to the present conflict; and the respondent is allowed to take now one position and then another, for the respondent acquires glory precisely if the opponent is unable to refute him in either position.

The third section describes the meta of falsehood, and its description is clear. For not just any concession of falsehood is the meta of a sophistic disputation; indeed there are many probable false positions propounded and believed by many philosophers, and to propound and concede such positions is by no means something unacceptable to the respondent. But it is unacceptable and unseemly for the respondent if under the force of the argument he concedes some manifestly false position, and the same applies should he grant some falsehood the falsity of which the opponent can show to the disadvantage of the respondent.

Now the meta of falsehood differs from the meta of refutation, for although it is necessary that one member of any contradiction be false, it is still possible that neither member should be manifestly false. The refuted party did not concede a conjunction consisting of contradictory propositions, since then he would have granted an obvious falsehood, but rather he conceded separately one member first, and the other member later; and if the member he conceded later by the force of the argument is manifestly false, then he was driven to two metas, namely, those of falsity and of refutation.

The fourth section describes the meta of implausibility, and the description is obvious. For it is unseemly to concede by the force of the argument something contrary to the common opinion of all or of most or of the more renowned professors. But the respondent may evade this meta by saying that what he conceded is not implausible, for although such and such philosophers are of the contrary opinion, nevertheless others, namely, so and so, are of this opinion; but if he cannot say this, he is driven back to a meta, although to one that is not so unacceptable as the previous ones.

The fifth section describes the meta of solecism, taking 'solecism' broadly for every kind of grammatically incorrect locution. It is in this way that some ancient philosophers incurred this meta when they denied the multitude of beings; it is of these that Aristotle tells us in bk. 1 of the *Physics* that some of them, in order that they would not be forced to say that one is many, eliminated [the copula] 'is' from their propositions, so that they did not say: 'A man

is white', but rather 'A man white'; and others changed the locution and did not say: 'A man is white', but rather 'A man whites'.[18]

The sixth section describes the meta of redundancy owing to 'superfluous locution'; this occurs when something is uselessly added to an otherwise complete proposition or expression. Now the most obvious case of redundancy, which is the one most aimed at by the sophist, occurs when the same word or phrase is uselessly repeated, as in 'A man man runs' or 'Socrates has a curved nose nose'. If, however, the same phrase is repeated on some reasonable grounds, then there will be neither superfluity nor uselessness, and, consequently, there will not be redundancy either, for example, when for the sake of emphasizing our praise we say 'Oh, God, my God!', or when, so as to strengthen our reproach, we say 'Oh, you scoundrel, you scoundrel!'

The last section says that none of the aforementioned unacceptable positions is a meta in a sophistic disputation, unless it is conceded or appears to be conceded by the force of the opponent's argument, for otherwise the opponent would derive no glory from it. But the opponent arrives at his desired end either when the respondent concedes it or when he appears to concede it, or even when it is concluded or appears to be concluded by the opponent against the respondent and the respondent does not refute it, whether this is really so, or only apparently.

7.1.7 The description of fallacy

(1) A fallacy, in the sense intended here, is the deception of someone unskilled in the art of sophistry by some sophistic argumentation. (2) Therefore, for each fallacy we have to provide its cause of illusion [*causa apparentiae*] and its cause of defectiveness [*causa defectus*].

The seventh part in its first section describes fallacies, insofar as the discussion of fallacies pertains to [that topic of] sophistic disputation, which is a part of the art of dialectic. And it provides a causal definition of the name 'fallacy', which signifies a certain act by means of names that signify its proper material and efficient causes.

This definition gives 'deception' as the genus of 'fallacy'; for just as to fool someone is to deceive him, and to be fooled is to be deceived, so a fallacy, or [an act of] fooling [someone], is a deception, by the *locus of conjugates*,[19] and

18. Aristotle, *Physics* I.2.185b25–32.

19. Buridan here treats *fallacia* (fallacy) as the abstract form of the verb *fallere* (to fool, de-

just as the act of a mover is the same as that of the thing moved, and is called 'motion', so the act of the one who fools someone is the same as that of the one being fooled, and is called 'fallacy'. Thus, just as motion is described as the act of the thing that can be moved insofar it can be moved and of the moving thing insofar as it is moving, and just as, more specifically, alteration is the act of the thing that can be altered insofar as it can be altered, and that of the thing doing the altering, insofar as it is doing the altering (as is determined in bk. 3 of the *Physics*),[20] so fallacy is described as the act of someone who can be fooled, insofar as he can be fooled, and the act of the one who fools, insofar as he fools, by which the one fooling actually fools and the one that can be fooled is actually fooled; and we have already said that this act is a deception, by means of which one deceives and the other is deceived.

But, again, in order to reach something that is more evident, we have to see what it is that is appropriately called a fallacy and by virtue of what it is so called, and what is involved in being the one who can be fooled, and what is involved in being the one who fools. In connection with this it is obvious that it is not a man insofar as he is a man that is called someone who can be fooled, for someone skilled in the art of sophistry may not be fooled by such fallacies. Rather, someone can thus be fooled insofar as he is unskilled, and not in just any art or science, but in the art of sophistry. Therefore, in this causal definition, with respect to the matter, or proper subject [of the act of deception], it is correctly said that a fallacy is the deception of someone unskilled in the art of sophistry; and this is indicated by Aristotle, who says: "And this seems to be because of lack of skill."[21] Likewise also a man neither fools someone by these fallacies insofar as he is a man, nor indeed even insofar as he is a sophist (i.e., as someone who possesses the art of sophistry), although it is true that such a person knows better how to fool somebody and can do so better than someone who is not thus skilled; for Aristotle says: "It is true that by these fallacies the unskilled sometimes fool the skilled and those who know."[22] Rather, a man fools another or himself when either of them is unskilled and has adopted or constructed a sophistic argument, and this he does by means of such an argument. Therefore, with respect to the efficient cause, the definition correctly adds "by a sophistic argument."

Some, however, concede this to be a correct definition of 'fooling', but they

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ceive [someone]), and this is why he can apply the locus concerning concrete and abstract terms. See 6.6.2.

20. Aristotle, *Physics* III.3.202b23–29.

21. Aristotle, *On Sophistical Refutations* 1.164b26.

22. *Et verum est his fallaciis aliquando artifices et scientes falli ab insciis.* See Aristotle, ibid., 6.168b6–7. See 7.1.3 n. 7.

distinguish between 'fooling' [*fallitio*] and 'fallacy' [*fallacia*]. Therefore, they describe fallacy as a certain aptitude or propensity to deceive. And I do not reprove this opinion, for names signify at will [*ad placitum*], and one does not have to dispute about the meaning of a name [*quid nominis*]. For if they interpret 'to deceive' in the active sense, then the aptitude to deceive, properly speaking, is the sophistic argumentation itself, or its illusion and defectiveness, which, again, are nothing but the sophistic argumentation itself; therefore, a fallacy taken in this way would not be anything other than the sophistic argumentation itself, which we discussed earlier. But if they interpret 'to deceive' passively, then the liability to be deceived arises from inexperience, which is the inexperienced person himself.[23]

The second section of this part draws an obvious corollary. For it has been said before that a sophistic refutation, or a sophistic argumentation, by means of which a fallacy comes about, involves illusion and defectiveness.

7.2 Chapter 2: On the division of fallacies

*7.2.1 The division of fallacies into those 'of words' [*in dictione*] and those 'apart from words' [*extra dictionem*]*

(1) There are two modes of arguing sophistically and deceptively: for some [such arguments] take place by means of [the use of] words, and some apart from [the use of] words; whence some fallacies are called [fallacies] 'of words' [*in dictione*], and some 'apart from words' [*extra dictionem*]. (2) A fallacy is called a *fallacy of words* if its cause of illusion pertains to the conventionally signifying words, (3) and a fallacy is called a *fallacy apart from words* if its cause of illusion pertains to the signified thing or intention.

23. Obviously, all this is to be understood in line with Buridan's ontological doctrine, according to which a privation is not distinct from the subject deprived.

The second chapter is about the distinction and enumeration of fallacies. In this chapter the divisions, subdivisions, and enumerations of fallacies are given in five principal parts.

The first part contains three sections. The first lays down the first division of fallacies in accordance with the division of sophistic argumentation that yields the types of arguments that Aristotle calls the sophistic modes of arguing.[24] He says, therefore, that some of them are of words and some are apart from words; and 'word' is not taken here as it is distinguished from 'expression', namely, for incomplex terms, but broadly, for any conventionally significative utterance, whether complex or incomplex; indeed, words in this sense include even writing, on account of the fact that writing is subordinated conventionally [*ad placitum*] to significative utterance, as is stated in bk. 1 of *On Interpretation*.[25]

The two other sections clarify the members of this division. Now in this connection we should note that fallacies are not said to come about either from words or apart from words simply because the opponent, in some of his argumentations, uses significative utterances and in some he does not, for it is obvious that in a disputation significative utterances have to be used in all argumentations; but this has to be understood, as has been said elsewhere,[26] in such a way that to spoken terms, propositions, and argumentations there correspond in the mind signified intentions, which are mental terms, propositions, and argumentations.

Thus, as those sections indicate, there are some spoken sophistic argumentations which are such that the intentions corresponding to them in the mind do not appear to be argumentations, if we exclude from consideration the significative utterances, and so it is obvious that the illusions generated by these argumentations derive from the significative utterance; and the fallacies that come from such argumentations we call 'based on words' [*secundum dictionem*], i.e., 'based on significative utterances' [*secundum vocem significativam*]. There are also other spoken sophistic argumentations to which there correspond intentions in the mind such that even without the consideration of utterances they appear to be argumentations, and thus it is clear that their [illusory] appearance does not derive from significative utterances. Therefore, fallacies coming about in this manner are said to be [fallacies] apart from words, i.e., [ones coming about] without the consideration of significative utterances, having their [illusory] appearance in the mind.

For example, let us construct a paralogism based on words [*secundum dictio-*

24. Aristotle, *On Sophistical Refutations* 4.165b23.

25. Aristotle, *On Interpretation* 2.16a19–20.

26. See 4.1.3.

nem], an instance of the fallacy of equivocation, thus: 'Every dog is an animal; a constellation is [a] dog; therefore, a constellation is an animal'; and let us construct another apart from words [*extra dictionem*], an instance of the fallacy of accident, thus: 'Every man is an animal; a donkey is an animal; therefore, a donkey is a man'. Both of these paralogisms appear to be [valid] syllogisms, because they have one middle term that connects the extremes by subjection and predication, which is required for a valid syllogism. But in the first paralogism the unity of the middle term, which is the cause of illusion, is merely the unity of the utterance, and this holds *only* with regard to the utterance, for to this [unity] there corresponds a diversity of intentions in the major and the minor [premises], insofar as they are true. Therefore, excluding the consideration of utterances, no unity of the middle term appears in the intentions; hence those intentions will not appear to constitute a syllogism. But in the second paralogism the middle term is the same both in the utterances and in the intentions; for the same intention corresponds to the utterance 'animal' both in the major and in the minor proposition, insofar as these propositions are true (although they are not true of the same things among those for which that intention supposits, but one [is true] of some of them and the other [is true] of others); therefore, even excluding the consideration of the utterance, the unity of the middle term remains in the intentions, wherefore those intentions still appear to constitute a syllogism.

From all this you may conclude that in the first syllogism the defectiveness occurs more by reason of the variation of the middle term than it does in the second one. For in the first the middle term varies with respect to the signified intentions, but not in the second, where there is only variation with respect to the things of which the propositions are verified, the intention remaining the same in both (for 'animal' signifies both men and donkeys by means of the same intention). Therefore, in the first paralogism, if it is completely resolved, the middle term has to be distinguished, but not in the second one; in this case it is the consequence that has to be denied because of a defect of the syllogistic form, which will be explained later.

But in connection with this you will ask: 'So can someone be deceived by fallacies based on words, if he is merely thinking by himself, and without uttering anything?' And I say that indeed, he can, but this is not without the consideration of significative utterances. For I can consider utterances and a spoken paralogism without uttering anything, and think that it has the same middle term, and on the basis of this identity I may believe that it is a valid syllogism, and that the one corresponding to it in the mind is also valid.

*7.2.2 The general basis for distinguishing fallacies of words [*in dictione*]*

(1) Fallacies of words stem from the multiple signification of the same utterance. (2) Therefore, as Aristotle says, they come about in as many ways as the same names or expressions may signify not the same but several things.[27] (3) And the cause of illusion in them is the unity of the significative utterance, whereas the cause of defectiveness is the diversity of the signified intentions.

The second part shows the general basis for distinguishing fallacies of words, and it has three sections. The first pinpoints the root from which fallacies of words stem and whence they are constructed; for they stem from the multiple significations of the same utterance, i.e., from the fact that the same utterance signifies diverse intentions in the soul. For we sometimes believe that a spoken argument is simply valid, in the same way as it would be if the utterance signified only one intention, but if this is not true, then we are deceived.

It is on these grounds that the second section infers that sophistic argumentations, or fallacies, of words can come about in exactly as many ways as one name or one expression can signify not one, i.e., a single intention, but several. For a fallacy of words does not come about because the same utterance signifies several ultimate significates, in the way that 'man' signifies several men, and 'animal' several animals, provided that the intention signified immediately in the mind remains the same, just as does the utterance, for then there exists both in the mind and in the utterance the unity required for a syllogism.

The third section pinpoints the common cause of illusion and the common cause of defectiveness in fallacies of words in accordance with what has been said. For the cause of illusion is the identity of the utterance required for true spoken argumentations, and this is present both in sophistic argumentations based on words and in true argumentations. The cause of defectiveness, on the other hand, is the diversity of the signified intentions, since a true argumentation requires not only identity of utterance but also identity of intention, the reason being that a spoken argumentation cannot be valid unless a valid mental one corresponds to it.[28]

27. See Aristotle, *On Sophistical Refutations* 4.165b27–30.

28. Indeed, this is why "mental language" is utterly relevant to logic.

7.2.3 The three kinds of ambiguity [multiplicitas] *of words*

(1) Thus, a word or an expression is said to be ambiguous [*multiplex*] if while remaining the same it has many significations. The ambiguity [*multiplicitas*] of words or expressions used in distinguishing fallacies based on words is usually said to be threefold, namely, actual, potential, and imaginary. (2) Actual ambiguity occurs when a significative utterance that is one both in matter and in form has many significations, and this is how the fallacies of equivocation and amphiboly come about. (3) Potential ambiguity occurs when an utterance that is the same in matter but diverse in form has many significations, and this is how the fallacies of composition and division and of accent come about. (4) Imaginary ambiguity is said to occur when utterances that are diverse in matter but have some likeness in form have dissimilar significations or consignifications; and thus comes about the fallacy of the figure of words [*figura dictionis*].

On the basis of the above-stated foundation the third part presents the main division of fallacies of words, and clarifies its members in four sections. The first provides a threefold classification of ambiguous words, the members of which are explained by the subsequent sections.

Therefore, so as to help with the other three sections by explaining the names we use there and their conventional significations, we should now note that form is act and matter is potency, and that a thing is in actuality by form and in potentiality by matter, wherefore the authors called that ambiguity of an utterance 'actual' which preserves both the material and formal identity of the utterance simultaneously, and 'potential' that which preserves only the material identity of the utterance itself. But since imagination is sensory appearance, and often without the experience of real things, because it occurs in the absence of sense-objects (as is said in bk. 2 of *On the Soul*),[29] an apparent but not real ambiguity of an utterance is called an 'imaginary ambiguity'. Now this obtains when utterances that have diverse significations and are not the same either in form or in matter seem to be the same because of some similarity. In this way, then, the fallacies of equivocation and of amphiboly come about by an actual ambiguity of utterances, whereas the fallacies of composition and division and of accent come about by a potential ambiguity, and the fallacy of figure of words comes about by an imaginary ambiguity.

Further, we should note that in the foregoing we call the 'matter' of a signi-

29. See Aristotle, *On the Soul* III.3.428b25–429a.

ficative utterance the sounds and syllables that make up an incomplex word, or, in addition, the incomplex words of which a [complex] expression is composed. And we call 'form' the various modes of uttering, accenting, separating, or connecting the various words that occur in the utterance of an expression, or such things.

7.2.4 A sixfold subdivision of the members of the previous division, yielding the six fallacies of words

(1) The fallacy of equivocation comes about by the actual ambiguity of an incomplex utterance, whereas the fallacy of amphiboly does so by the actual ambiguity of an expression. (2) Similarly, the fallacy of accent comes about by the potential ambiguity of an utterance. (3) The fallacy of figure of words comes about by the imaginary ambiguity of a word or expression. (4) The fallacy of composition comes about if an expression is false in the composite sense and is believed to be true because of its truth in the divided sense, and the fallacy of division occurs in the other way round. (5) Thus, there are six fallacies of words, namely, the fallacies of equivocation, amphiboly, accent, figure of words, composition, and division.

The fourth part provides a subdivision of the members of the foregoing division in five sections. The first section divides the actual ambiguity of utterances into that of incomplex utterances, by means of which the fallacy of equivocation comes about, and that of complex utterances, by means of which the fallacy of amphiboly comes about. In the same way, the second section divides the potential ambiguity of utterances, as is obvious. Again, the third section correctly indicates a similar division of imaginary ambiguity.

But the question is raised as to why we do not posit diverse fallacies, but only one, where imaginary ambiguity is concerned, namely, one relating to incomplex words and one relating to expressions, as we did in the cases of the other ambiguities. And I reply that it is not unacceptable to posit diverse fallacies. But Aristotle, for the sake of brevity, did not care to distinguish them, for one can easily envisage their distinction as analogous with the distinctions he dealt with earlier in connection with the other ambiguities.

The fourth section divides the potential ambiguity of expressions into two fallacies, namely, those of composition and of division, as is sufficiently clear.

But then it is also queried why did he not similarly divide the actual ambi-

guity of expressions into two fallacies but posited only one, namely, the fallacy of amphiboly, and also why did he not divide the potential ambiguity of words into two fallacies, as he did with the potential ambiguity of expressions. For this is queried by many people.

To the first of these queries one can reply that in actual ambiguity the expression is one in utterance, although it is many in intention, whereas in potential ambiguity the expression is not absolutely single in utterance, but diverse, although it is single in a certain respect, namely, in its matter. And this is what Aristotle wished to indicate by dividing potentially ambiguous expressions but not dividing actually ambiguous expressions.

To the second I reply that it is not unacceptable to divide a potentially ambiguous incomplex word into two diverse words, just as a potentially ambiguous expression was divided. For just as on the basis of the truth of a composite expression we may believe the divided one to be true, so we can believe on the basis of the truth of an expression with a grave accent the truth of the same with an acute accent, and conversely. But Aristotle, for the sake of brevity, just as I said in connection with imaginary ambiguity in the preceding section, did not care to express that distinction either, since anyone can see that those divisions, and the diverse reasonings proceeding from the various accents to each other, are analogous with those that are brought to bear concerning the reasonings proceeding from the composite to the divided expressions, and conversely.

The fifth section concludes that the number of fallacies of words is six, in accordance with their above-described divisions. And it would not be unacceptable if more were enumerated, if further subdivisions were introduced, as we noted in connection with the fallacy of figure of words and the fallacy of accent. Indeed, each of these fallacies, and the other seven that are posited apart from words, are usually divided into various modes, and these could be called the diverse species of the fallacies, just as the diverse species of quality are enumerated as being four, whereas there are many more if they are subdivided further into the most specific species.

7.2.5 The distinction of seven fallacies apart from words

(1) With regard to fallacies apart from words, and given the definition of refutation, it is obvious that a defect can occur where a contradiction is

concerned, and thus comes about the fallacy of *ignorantia elenchi* [ignorance of elenchus]; (2) second, it can occur where the inferred conclusion is concerned, and thus comes about the fallacy of *petitio principii* [begging the question]; (3) third, it may arise from a defect in an ostensive syllogism with respect to the inference, and thus comes about the fallacy of accident; (4) fourth, the fallacy of non-cause as cause stems from a defect in the regression from the conclusion to the premises in a syllogism *ad impossibile.* (5) Furthermore, since a refutation involves terms, propositions, and consequences, a fallacy can result from the relation of one term to another, and thus comes about the fallacy of *secundum quid et simpliciter* [with qualification and absolutely], (6) or from the relation of one proposition to another, and thus arises the fallacy of [treating] many questions as one, (7) or from the relation of one consequence to another, and thus comes about the fallacy of the consequent. (8) And so there are seven fallacies apart from words, as will be clear in more detail in the particular discussion of each.

The fifth part enumerates and distinguishes seven fallacies apart from words by inspecting the defects that cause the diverse arguments in which they occur to fall short of being an elenchus while appearing to be one, even excluding the consideration of the utterance. So there are eight sections here, namely, seven for the distinction of the seven fallacies, and one that states their number. And it is not inappropriate if they are not listed in the same order as that in which Aristotle discusses them.

The fallacy of *ignorantia elenchi* occurs when the argumentation is valid and correctly proves its conclusion, yet the conclusion only appears to but does not actually contradict the position of the respondent. Thus the respondent appears to be refuted, which is sufficient for his sophistic opponent. This takes place if, for example, the respondent says that Socrates is not equal to Plato and the opponent, arguing against this, correctly demonstrates that they are equal in height, because they both measure seven feet.

The fallacy of *petitio principii* occurs if the conclusion of the opponent does in fact contradict the conclusion of the respondent, and is validly inferred from its premises, but is not proved by them since they are not better known than the conclusion. Thus it does not amount to an elenchus, for an elenchus has to be a demonstrative syllogism. And such a syllogism is said to be defective in matter, though not in the matter of syllogism as such, but in the matter of demonstrative syllogism insofar as it is demonstrative.

The fallacy of accident occurs if the paralogism involves true premises that are better known than the conclusion but does not correctly infer the conclusion, for example, 'Every man is an animal; a donkey is an animal; therefore

a donkey is a man', assuming that the respondent has said that no man is a donkey. Such a paralogism is said to be defective in form.

Next, in the style of a syllogism *ad impossibile,* a fallacy occurs when we take what the respondent said and combine it with another premise or premises so as to infer an impossible conclusion, but, though the other premise or premises appear to be true, one of them is in fact impossible. Now although it was on the basis of the impossibility of this premise that the impossible conclusion followed, nevertheless we [fallaciously] return to what the respondent said, concluding that it is impossible, as though it were the impossibility of his position that yielded the impossible conclusion. And this is how the fallacy of non-cause as cause comes about.

Fifth, there is the fallacy that arises from the fact that one term is somehow included in another, as a term taken absolutely is included in the same taken with qualification, namely, with some addition. Therefore, we think that the consequence from the term with qualification to the term taken absolutely is valid, there being also many cases in which we see such an inference to be valid. It is this that we call the fallacy *secundum quid et simpliciter.*

Sixth, a fallacy also results from the relation of a proposition to a proposition, as when we believe that something has to hold in the case of many propositions analogously to what holds in the case of one, because in many cases this holds, although not in all. Thus, when this does not hold, then we are deceived, and we have [an instance of] the fallacy of [treating] many questions as one; for example, since someone blind is described as someone who should have [a] sight but does not have it, we believe that [several] blind [animals] should also be described as ones that should have [a] sight but do not have it .[30]

Finally, a fallacy results from the relation of one consequence to another. Since many (but not all) consequences are convertible, if we believe that one consequence is convertible into another when it is in fact not convertible, then we are deceived, and the fallacy of the consequent occurs.

The last section concludes from the foregoing that the number of fallacies apart from words is seven, and they are listed here by name, thus: the fallacy *secundum quid et simpliciter,* the fallacy of *ignorantia elenchi,* the fallacy of the consequent, the fallacy of *petitio principii,* the fallacy of non-cause as cause,

30. As Buridan later (7.4.7. [13]) explains, a fallacy can occur here because on the basis of this description in the plural form we could conclude that both Plato and Socrates are blind, if, say, Plato does and Socrates does not have sight. For in this case they are animals that should have a sight but do not, because they do not have Socrates' sight. Therefore, on the basis of the description, they are blind; but if they are blind, then both Plato and Socrates are blind, contrary to what has been posited, namely, that only Socrates is blind.

and the fallacy of treating many questions as one: for it is obvious that these are the ways in which we can be deceived concerning a refutation, i.e., the ways in which we do not have a refutation, while appearing to have one. And there seem to be no other modes that are not reducible to these. For even if fallacies result from some other relations of a term to a term or of a proposition to a proposition or of a consequence to a consequence, nevertheless, the ones mentioned above, namely, the one *secundum quid et simpliciter,* that of treating many questions as one, and that of the consequent are those whence (in these three genera of fallacies) deceptions are more likely and more frequent to arise. And so, in the place of these three genera of fallacies their most principal or more frequent species should be named, so that in the enumeration of the seven fallacies apart from words one would be taken to result from the relation of one term to another, on account of which its most frequent species would be mentioned, i.e., the one that results from the relation of a term with qualification to a term taken absolutely, and likewise where the relations of proposition to proposition and of consequence to consequence are concerned.

7.3 Chapter 3: On fallacies of words

7.3.1 The aim of the chapter

> To launch our discussion of each fallacy in particular, we shall describe the terms used to name a given fallacy, we shall determine its cause of illusion and its cause of defectiveness, and how it comes about; we shall also distinguish and clarify its various modes.

The third chapter will provide a specific discussion of each and every fallacy of words. It will have ten parts, the first of which propounds in general what will be determined concerning each of these fallacies and in what manner; the second will be about the fallacy of equivocation, the third about the fallacy of amphiboly, the fourth about the modes of these two fallacies, the fifth about the ways in which the fallacies of composition and division resemble each other, the sixth about the differences between them, the seventh about the modes of the fallacies of composition and division, the eighth about the fallacy of accent, the ninth about the fallacy of figure of words, and the tenth about its modes.

This first part is clear enough.

7.3.2 The fallacy of equivocation

(1) Equivocation, in the sense intended here, is the diverse significations of the same incomplex utterance, or the same incomplex utterance having diverse significations, or the use of an equivocal term for its diverse significations. (2) The fallacy of equivocation is a deception resulting from the actual ambiguity in matter and form of an incomplex utterance. (3) The cause of illusion is the identity of that incomplex utterance in both matter and form, and the cause of defectiveness is the use of that word in its diverse significations. (4) The fallacy of equivocation occurs when, because of the identity of the utterance as such, it is believed that it is used along with the same intention, whereas in fact it is used along with diverse ones.

The second part, which is specifically concerned with the fallacy of equivocation, has four sections. The first describes equivocation, as taken here, in terms of three descriptions. The first allows one to say that the name 'equivocation' supposits for the significations of an equivocal term, the second allows one to say that it supposits for the equivocal term, and the third allows one to says that it supposits for the use of the equivocal term in its several significations.

You may ask: "Which one of the these would you propose?" To this I reply that names name by convention [*nomina sunt ad placitum*]; therefore I do not reprove any of these ways of expressing the matter, but at the same time the third one seems to me to be most to the point.

The second section describes the fallacy of equivocation. The third determines the cause of illusion and the cause of defectiveness involved in the fallacy of equivocation. The fourth section shows the way in which the fallacy of equivocation occurs. The whole [text] is obvious enough.

7.3.3 The fallacy of amphiboly

'Amphiboly' [*amphibolia*] comes from *'amphi'*, which is 'doubtful', and *'bole'*, which is 'claim', as it were, a 'doubtful claim'. Therefore, amphiboly, as intended here, means the diverse claims made by the same spoken expression, or the same spoken expression making diverse claims, or the use of the same spoken expression to make diverse claims. The fallacy of amphiboly is a deception stemming from the actual ambiguity of an expression. Its cause of illusion is the identity of the spoken expression

in matter and form; the cause of defectiveness is the use of the same expression to make its diverse claims. The fallacy of amphiboly, therefore, occurs when, because of the identity of the spoken expression, it is believed that it is used to make the same claim.

The third part makes all its points concerning the fallacy of amphiboly in a fashion analogous to those made by the previous part concerning the fallacy of equivocation. Therefore, the whole [passage] is clear enough.

7.3.4 The modes of the previous two fallacies

According to Aristotle, both of the foregoing fallacies have three analogous modes. Thus the first mode occurs when the name or the expression principally signifies several things, the second occurs when the name or expression has one primary and principal signification along with another or several others related to that primary one, and the third one occurs when in context it signifies several things, but in isolation only one.[31] As an example of the first mode, in equivocation we have: 'Every dog is barking; some constellation is [the] dog; therefore, some constellation is barking'; in amphiboly: 'Whomsoever I want me to capture, I want them to capture me, but I want me the enemy to capture; therefore, I want the enemy to capture me'.[32] An example of the second mode, in equivocation: 'Everything that is healthy is an animal; a urine sample is healthy; therefore a urine sample is an animal'; in amphiboly we have: 'Whoever carries water in a sieve is in or next to water, but who learns letters without a book carries water in a sieve; therefore, who learns letters without a book is in or next to water'. An example of the third mode in equivocation would be: 'Whoever recovered is healthy; someone ill recovered; therefore, someone ill is healthy'; in amphiboly we have: 'Whatever knows something this knows; but the world something knows;[33] therefore the world this knows'.

31. Aristotle, *On Sophistical Refutations* 4.166a14–18.

32. The point is that *vellem me accipere pugnantes* is an ambiguous construction (which is why I had to use here the rather odd, but at least similarly ambiguous, 'I want me the enemy to capture'), for it may signify either that I want me to capture the enemy or that I want the enemy to capture me. See p. 519. See also Aristotle, *On Sophistical Refutations* 4.166a8.

33. As will be seen, the point here is that *saeculum scit aliquid* is an ambiguous phrase (which is why I used in the translation the similarly ambiguous, although somewhat odd

Since the fallacies of equivocation and of amphiboly have a strong affinity to each other, in the fourth part their modes are distinguished together, and afterwards, having been distinguished, illustrated by examples. There are three modes of each fallacy. And you should take 'name' here not as it is distinguished from 'verb', but broadly, for any incomplex significative utterance, whether it be a name or a verb, or a categorematic or a syncategorematic word.

A name or an expression is said to have several significations principally if both are imposed without reference to the other. This is the fault of the first mode of equivocation, namely, that the name 'dog', according to one of its impositions, signifies a barking animal and according to another a constellation in the sky, and then in the major premise it is taken in one of its significations, namely, for the barking animal, and in the minor premise in the other, namely, for the constellation in the sky; therefore the middle term is one only in utterance, whereas in a valid syllogism the middle term has to be one both in utterance and in intention, indeed, more in intention than in utterance.

So next let us posit that we take the aforementioned term in one of its significations, both in the major and in the minor; wouldn't the syllogism then be valid? I say that it would then be formally valid, but one of the premises would be false, because for the barking animal the major would be true and the minor would be false, whereas for the constellation in the sky it would be the other way round.

But next let us posit yet another case, namely, that in which both the opponent and the respondent are well aware of the ambiguity of this term, and both of them intend to take it indifferently in any of its significations; would it not then be a valid syllogism, if it were asserted as: 'Every dog runs; a constellation in the sky is [a] dog; therefore, a constellation in the sky runs'? For it would seem that this is so, since it would be in the third mode of the first figure, and it would hold by *dici de omni;* this is so because 'dog' would then be distributed for all its significates; whence it would be permitted to take a particular under any of its significates and to infer the conclusion indifferently.

To this I briefly reply that an equivocal term neither signifies its several significates by way of a conjunction, nor does it signify them by way of a disjunction, but it signifies them entirely separately, namely, either of them as if it did not signify the other.[34] And so should it happen that we want to take the

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construction), which can mean either that the world knows something, in which case it is of course false, since the world is not a knowing subject, or that something, say, a human being or some other knowing subject, knows the world, in which case of course it can be true. See p. 523.

34. As the anonymous referee for Yale University Press has pointed out: "This is a quota-

term for both of its significates, then the utterance 'every dog runs' would be equivalent in its signification to the utterance 'every barking animal constellation in the sky runs', but then this utterance would not be one proposition, and consequently not a proposition at all, although it might be called several propositions; and likewise the utterance 'a constellation in the sky is [a] dog' would be like 'a constellation in the sky is a constellation in the sky barking animal', which is not a proposition either. Therefore, there would be no syllogism here either, for in every syllogism, either premise taken in itself should be a proposition.

But then you ask again: 'Let us posit that the parties agree that the equivocal term signifies its significates by way of a conjunction and that it is taken in this way in the disputation; what, then, should we say about our problem?' I respond that the term in that case would not be equivocal, and that the proposition 'A dog runs' should not be distinguished but would rather be a proposition with a conjunctive extreme, or it would be an ungrammatical expression, for it would be equivalent to 'A barking animal and a constellation in the sky runs', whereas grammatically speaking one should say 'run', whence even in the posited case one would have had to say 'A dog run'.[35]

Thus also the example about amphiboly is defective, for 'me the enemy to capture' can have two senses, namely, either that I capture the enemy or that the enemy capture me. And in the first sense the minor would be true and the major false, but in the second sense the converse [would obtain].

Next, as regards the second mode of equivocation and amphiboly, we should know that a term that is ambiguous in this second way is not properly speaking equivocal but analogous. But some people think that such a term taken in its proper sense should then be taken for its principal significate, if it is uttered on its own, without any addition. Whence they say that the proposition '[A] urine [sample] is healthy' is to be denied, but it can be conceded that [a] urine [sample] is healthy as a sign, and thus they say that the paralogism 'Everything healthy is an animal; [a] urine [sample] is healthy; therefore, [a] urine [sample] is an animal' is not to be resolved by the distinction of ambiguity but by the elimination of the minor, for it goes wrong in its matter but not in its form.

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tion from the Alexander who wrote a commentary on the *Sophistici Elenchi:* for a discussion of Alexander, see S. Ebbesen, *Commentators and Commentaries on Aristotle's Sophistici Elenchi* (Leiden: Brill, 1981), 1:286–89. Ebbesen has edited the fragments of the commentary in ibid., 2:331–555. For his more up-to-date thoughts on Alexander's identity, see S. Ebbesen, "Philoponus, 'Alexander,' and the Origins of Medieval Logic," in *Aristotle Transformed: The Ancient Commentators and Their Influence,* ed. R. Sorabji (Ithaca: Cornell University Press, 1990), pp. 445–61."

35. This is because the conjunctive subject would demand the plural form of the verb.

But it is obvious that these people are not providing a satisfactory solution, for in a sophistic disputation they would immediately be driven to the meta of implausibility, although they might avoid the meta of falsity or refutation. For someone who denies the authority of the wise and most reliable authors or who speaks against them incurs the meta of implausibility, as was said earlier. Still, it is well known that not only poets but even the Bible, and all theologians, preachers, and philosophers often use figurative and parabolic expressions, not only according to their proper signification but even by attribution.[36] If, therefore, the respondent posits that everything healthy is an animal, and then I, opposing sophistically, were to say that a urine sample, which is not an animal, is healthy, and if, further, he were to deny the proposition 'A urine sample is healthy', then I would immediately conclude, by the maxim of contradictories, that he would have to concede that no urine sample is healthy, and this contradicts all philosophers and physicians. And then I would say that this impropriety is enough for me and that he should reply in another way and that he is to be taken to be confounded, unless he can defend himself otherwise. Still, he can defend himself from such a meta and confusion by making a distinction, namely, if he concedes the major using the principal signification of the term 'healthy', while positing the minor in its attributive signification, as do the philosophers and physicians, and then the conclusion does not follow.

And the example about amphiboly is resolved in the same way. For the major is true in the proper sense of the expression 'carries water in a sieve', and the minor is false; but the minor is posited and conceded in the metaphorical sense, and [so] the major is denied.

Then, concerning the third mode of equivocation and amphiboly, the paralogism of equivocation derives from the fact that the term '[someone] ill' taken on its own is not ambiguous, nor even when taken with a verb of present tense, but when taken with a verb in the past or future tense it acquires ambiguity, not of its principal signification but of supposition. Therefore, the proposition 'Someone ill recovered' is ambiguous, but the proposition 'Someone ill is healthy' is not. For a verb of past tense ampliates names to supposit not only for present but also for past things; therefore 'Someone ill recovered' has to be distinguished either someone who is ill recovered or someone who was ill recovered. If, therefore, in the previous syllogism we posit the case that the major is true, then, if the minor is assumed with reference to someone who is ill, then it is false, but if it is taken for someone who was ill, then it is

36. 'By attribution', i.e., with reference to its primary signification, as a urine sample is called healthy by attribution, i.e., with reference to the health of an animal, insofar as it is called healthy only because it indicates the health of the animal from which it comes.

true, but the conclusion does not follow, since the minor was assumed with reference to past things and the conclusion covers only present things.

This is what Aristotle says, but it seems to me that in this paralogism no proposition is ambiguous, and neither do we have the fallacy of equivocation here, nor is it one of words, but rather one apart from words, namely, the fallacy of accident. For the proposition 'Someone ill recovered' is not to be distinguished, since it has a single sense, which is to be expressed by a proposition having a disjunctive subject, namely, by 'Someone who is or was ill recovered'.

Under such an interpretation, therefore, if the major were true, we would have to posit the case that whoever recovered would still be healthy, and then the major and the minor would be absolutely true and would have to be conceded, but the conclusion would not follow from them, because of defectiveness of the form of the syllogism. For it would involve a movement from a more amply taken term to the same term taken less amply; for '[someone] ill' in the minor would be taken indifferently for present and past things, but in the conclusion only for present ones, and such a consequence is not valid, unless the more ample term has been distributed, as was said elsewhere.[37]

And I also say that there is no fallacy of words in this paralogism, because this ampliation of supposition by means of a verb of past or future tense does not take place on account of the utterance, nor does it occur in the utterance, but rather in the mental concepts. For even if one excludes all considerations of utterance, nevertheless, in the mental proposition the mental concept would be ampliated to supposit for past things by means of the mental verb in the past tense. And if you say that I contradict Aristotle, who gave this example, I reply that I do not contradict him, for in bk. 1 of the *Prior Analytics* he himself gave the rule that the verification of examples is not required.[38]

Now, then, let me distinguish anew the four modes of equivocation. The first and the second occur if the name is ambiguous with respect to its essential signification (here distinguishing essential signification from any grammatical signification or mode of signification); and then it either has both significations principally, as does 'dog', and this yields the first mode, or it has one principal signification, and another or others by attribution to it, and this yields the second mode.

The third mode occurs if the name has one essential signification but is am-

37. See 5.3.2.

38. See Aristotle, *Prior Analytics* I.39–41, 49b–50a. According to Ebbesen this is a spurious reference: S. Ebbesen, "The Summulae, Tractatus VII, De Fallaciis," in *The Logic of John Buridan,* Acts of the Third European Symposium on Medieval Logic and Semantics, ed. J. Pinborg (Copenhagen: Museum Tusculanum, 1976), p. 143.

biguous with respect to its modes of signification, as in the following paralogism: 'Whoever are the bishops are men; but these horses are the bishop's; therefore, these horses are men.' Here the utterance 'bishops' is twofold, for it can be in the nominative case, and then the major is true and the minor is false, or it can be taken in the genitive case, and then the major is false and the minor is true.[39]

The fourth mode occurs when the term is taken in several ways neither with respect to its essential signification nor with respect to its grammatical mode of signification, but rather when its ambiguity is taken with respect to its mode of suppositing. And this ambiguity is taken to occur on the part of the significative utterance, as when the name is taken in one proposition personally, or significatively, and in the other materially, as when arguing as follows: 'Everything risible is a man; risible is a proper accident of man; therefore, a proper accident of man is a man'; or thus: 'Man is a species; Socrates is a man; therefore, Socrates is a species'.

We should know, therefore, that (as it seems to me), material supposition occurs only where significative utterances are concerned. For no mental term in a mental proposition supposits materially, but rather always personally, for we do not use mental terms by convention [*ad placitum*] as we do with utterances and written marks. This is because the same mental expression never has diverse significations, or acceptations; for the affections of the soul [*passiones animae*] are the same for all, just like the things of which they are the likenesses, as is said in bk. 1 of *On Interpretation*.[40] Therefore, I say that the mental proposition corresponding to the proposition 'Man is a species', insofar as it is true, is not a proposition in which the specific concept of men is the subject, but rather it is a proposition in which the subject is the concept by which the specific concept of men is conceived; but it supposits not for itself, but rather for the specific concept of men. And from this it is sufficiently clear that paralogisms involving such a change of supposition come under the fallacies of words.

But then the doubt arises as to how we shall maintain Aristotle's position that there are three modes common to equivocation and amphiboly. My opinion is that this is clear enough as far as the first two modes of equivocation and the first two modes of amphiboly are concerned. But the third mode of equivocation does not properly have an analogue in amphiboly, for the modes

39. The Latin *episcopi* can indeed mean either 'bishops', in the nominative, or 'bishop's', in the genitive case, and although these are distinguished in written English, in spoken English the paralogism can be quite exactly reproduced.

40. Aristotle, *On Interpretation* 1.16a6–8.

of signification are attributed to incomplex words but not to expressions, except when this is done on account of the words that they involve.

In the fourth mode of equivocation, however, it is possible to set up a comparison, or analogy, within amphiboly. For although a proposition does not supposit, except perhaps materially, nevertheless, some type of expression, such as a definition, can supposit both materially and personally, as would occur if we were to argue as follows: 'Every rational mortal animal is a man; rational mortal animal is a definition; therefore, a definition is a man'. Thus, therefore, there are three modes common to equivocation and amphiboly. But by maintaining this position Aristotle does not deny that there can be another mode of equivocation, this being one that does not have such features in common with amphiboly.

So it looks as though these last modes of equivocation and amphiboly do indeed satisfy the condition stated by Aristotle, namely, that [the term or expression] in context signifies several [things], but taken separately [it signifies] unambiguously;[41] for the name 'man' taken on its own does not supposit, and hence it has thus no ambiguity of supposition, but if it becomes the subject or the predicate of a proposition, then it does supposit, and it can have ambiguity, for it can be taken in personal supposition, and it can also be taken in material supposition. And this is why the following argument is defective: 'Everything risible is a man and risible is an accident; therefore, an accident is a man'; for taking 'risible' personally, the major is true and the minor is false, whereas taking it materially, the major is false and the minor is true. And the same applies to an expression that is naturally apt to supposit personally, should it supposit materially.

But we should also note that the aforementioned condition—namely, that in context it signifies several things, but separately [it signifies] unambiguously—can apply to an expression not only on account of supposition in the way described above, but also otherwise, as in the argument 'Everything that knows something', etc. For the proposition 'The world knows something' is ambiguous, for 'world' can here be taken in the nominative case and 'something' in the accusative, and then the proposition is false, or 'world' can be taken to be in the accusative case and 'something' in the nominative and as prior to the verb [in the construction], and thus the proposition is true, for then it amounts to 'Something (i.e., some thing, namely, a man) knows the world'. But if from the expression 'The world knows something' you remove the last word, then the remainder, namely, 'The world knows', will not be an ambiguous proposition, for construing '[the] world' as posterior to the verb,

41. Aristotle, *On Sophistical Refutations* 4.166a17–18.

and as being in the accusative case [thus amounting to 'knows the world'], it would not be a proposition, for it would not have a subject.[42] It would appear that this is how Aristotle's remarks about these two fallacies can be expounded and maintained.

7.3.5 The ways in which the fallacies of composition and division resemble each other

(1) The fallacy of composition and the fallacy of division have a lot in common; therefore, some points concerning both should be made together. (2) In the sense in which we talk about composition and division in the present context, composition is the union of things that should be divided, and division is the separation of things that should be compounded. (3) The fallacy of composition, or even the fallacy of division, is a deception stemming from the potential ambiguity of an expression. (4) The cause of illusion in both of them is the identity of the expression in its matter; and the cause of defectiveness is the taking of that expression in diverse forms, to which there correspond several senses. (5) Therefore, both of these fallacies come about by believing, because of the material identity of the expression, that it is taken in the same form and in the same sense, whereas in fact it is taken in diverse ways.

The fifth part discusses the fallacies of composition and division together, insofar as they agree with each other. It has five sections: the first propounds the thesis that these fallacies have some similarities, and this has to be discussed in this part; the other parts explain those similarities.

The second section describes composition and division insofar as they account for fallacies of words. For composition is, as was said above, the union of things that should be divided, and division is the separation of things that should be composed. Now these have to be understood as conveying that an expression that is the same in its matter, i.e., in its letters, syllables, and words, sometimes contains words that can be connected or divided in the course of utterance or in writing, with the result that it can have diverse senses. Now we say that expressions that can thus be uttered in a connected or divided manner should be composed, if by their connection the expression would become true and by their division it would become false, and we say that they

42. See 7.3.4 n.33.

should be divided, if by their division the expression would become true and by their composition it would become false. Thus, a proposition that yields the fallacy of composition is the union of things that should be divided, i.e., the taking of an expression with its words connected, by which the proposition is rendered false, although by the separation of its words it would be true; and, conversely, the same should be said analogously about division. And all this will become clear in what follows.

The third section gives a common and undifferentiated account of the fallacies of composition and division, the fourth determines their causes of illusion and defectiveness, and the fifth shows how they come about. And the whole [text] is clear.

7.3.6 The differences between the fallacies of composition and division

> These fallacies differ insofar as the fallacy of composition occurs when an expression in the composite sense is false, and because of its truth in the divided sense, it is believed to be true, whereas the fallacy of division occurs conversely. The fallacy of composition therefore is a deception resulting from the potential ambiguity of a proposition, or expression, such that it is true in the divided sense and false in the composite sense, and conversely for the fallacy of division. The cause of illusion in the fallacy of composition lies in the identity of the expression, with respect to its matter, with its truth in the divided sense, and the cause of defectiveness is the diversity of that expression, with respect to its form, with its falsity in the composite sense; and conversely for the fallacy of division. The fallacy of composition therefore comes about from believing (on account of the material identity of the composite and the divided expressions) that they are also the same in form and sense and that because of the truth of the divided [sense] that the composite [expression] is true, whereas it is in fact false; and, analogously, the same may be said the other way around where the fallacy of division is concerned.

The sixth part is about the differences between the fallacies of composition and division and about the causes of illusion and defectiveness of both. And the whole [text] is obvious if one carefully considers what has been clarified so far.

7.3.7 The modes of the fallacies of composition and division

(1) In both of these fallacies six modes can be assigned. The first mode occurs on account of the fact that a determination can be connected to either of two determinables and be separated from one or the other of them, or it can be connected to both, as in the expression 'Whoever knows letters now learned them', for 'now' can be connected to and construed with 'knows' or with 'learned', and in the expression 'Whatever lives always is', for 'always' can be connected with 'lives' or with 'is'; and similarly in '[Of] forty men {of} a hundred left the divine Achilles'.[43] In this mode that sense is called 'composite' in which the word that can be connected to several others is connected to the one to which it has more affinity by its position, and 'divided' in which it is connected to the one to which it has less affinity by its position.

(2) The second mode occurs on account of the fact that several terms in conjunction can form one subject or one predicate, or in separation one can be the subject and the other the predicate, as in the expression 'For someone sitting it is possible to walk',[44] or 'For something white to be black is possible', or 'For a horse to be an animal is necessary'; for the whole dictum can be subjected and the mode predicated, or conversely, and thus we get the composite sense; or it is possible that one part of the dictum is subjected and the other is predicated and that the mode belongs to the copula, and thus we get the divided sense and a divided proposition. The case is similar with the expression 'Socrates white will be tomorrow',[45] for taking the whole [phrase] 'Socrates white' to be the

43. *Quadraginta virorum centum reliquit divus Achilles.* The syntactic ambiguity of this sentence cannot be preserved in one English sentence. The insertion of either of the two differently bracketed occurrences of 'of' in '[Of] forty men {of} a hundred left the divine Achilles' yields one of two equally possible translations of the same Latin sentence, expressing the two different senses distinguished by Buridan below, namely, the sense according to which the sentence says that Achilles left forty men out of a hundred, and the sense according to which it says that he left a hundred out of forty (which of course cannot be true). See Aristotle, *On Sophistical Refutations* 4.166a39–40.

44. Strangely, in the text we have *sedentem possibile est ambulare,* which is an example of the divided form. The corresponding composite form would be *sedentem ambulare est possibile,* i.e., 'For someone sitting to walk is possible' or 'That someone sitting is walking is possible' or, most naturally in English, 'It is possible that someone sitting walks' (which of course is not true).

45. This and the other examples in this passage are rather strained in English, if they can be regarded as being in English at all. Nevertheless, the theoretical point, distinguishing the

subject yields the composite sense, whereas the divided sense is obtained by taking 'Socrates' to be the subject and 'white' to be the predicate; and similarly with the expression 'A man risible is not', or with 'A man white begins to be'.

(3) The third mode occurs when several terms can be subjected or predicated together in a categorical proposition and can also be subjected or predicated separately, and then the proposition is equivalent to a hypothetical proposition, as in the proposition 'Five are two and three'; for if 'two and three' is one predicate, then the proposition is composite and is true, but if it is two predicates, then the proposition is divided and false, and is equivalent to 'Five are two and five are three'; and the same goes for the converse: 'Two and three are five', for 'Blackie and Tawny are worth ten pounds' and for 'Every animal is rational or irrational'.

(4) Still other modes can be assigned, namely, the fourth, which occurs when a negation is placed before a whole categorical proposition, as in 'Not man is an animal', for the negation can affect the whole [phrase] that follows, and then it is a negating negation and the proposition is composite, as was touched on earlier and will be explained in more detail later. Or it can affect only the subject, which follows it immediately, and then the negation is infinitizing, and the proposition is divided and true.

(5) There is also a fifth mode, which occurs when the negation is placed before a whole hypothetical proposition, e.g., 'Not man is a horse or a donkey is an animal'; for if the negation affects the whole hypothetical, then it is said to be composite and is false, for it contradicts the true proposition 'Man is a horse or a donkey is an animal'. But if it affects only the first categorical, then it is divided and is true, and it is a disjunctive proposition the categoricals of which are 'Not man is a horse' and 'A donkey is an animal'.

(6) Again, a sixth mode can be posited, namely, if a hypothetical proposition is composed of three categorical propositions, as when one says, 'A man is a donkey and a horse is a goat or God exists'; for the first two can be taken together in disjunction with the third, and then it is a disjunctive proposition the first member of which is a conjunction, and then it is composite and is true, or the first categorical can be taken separately in conjunction with the other two, and then this is a conjunctive proposition, the last member of which is a disjunction, and then it is divided, and is false, because of the falsity of the first part. Now it could be that other modes of these fallacies might be found; nevertheless, these are the more

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composite sense, 'The white Socrates will be tomorrow', from the divided sense, 'Socrates will be white tomorrow', is clear enough.

principal ones, or the more usual, and having seen what should be said about them, one can easily see [what should be said about] the others.

The seventh part determines six modes of the fallacy of composition and also of the fallacy of division. The first mode is clear enough on the basis of the examples provided here. Nevertheless, since one may reasonably ask why one sense should be called composite instead of divided, given that in both cases the word that can be composed with two others is compounded with one of them and is divided from the other, a rule is appended for recognizing which sense should be called composite and which one divided. And this text is clear.

But the question arises again as to when the word is in a position that is more appropriate and when it is in a position that is less appropriate. Therefore, so as to recognize this, I give two rules. The first is that a position is more appropriate if the word that can be compounded with either of two others is compounded with the more proximate one, and thus the expression is rendered composite, but if it is compounded with the more remote one, then the expression is rendered divided. For example, in 'Whoever knows letters now learned them', the proposition is rendered composite, if 'now' is taken to determine 'learned', and divided if it is taken to determine 'knows'.

The second rule is that if the word that can be compounded with several others is equally immediate or proximate to both, then the more appropriate position is that according to which the determinable precedes the determination with which it is compounded; for by natural order the determinable should precede its determination, as the substantive its adjective[46] and the verb its adverb. This is the manner in which 'Whatever lives always is' is composite, when 'always' is compounded with the word 'lives', and it is called a divided expression when 'always' is compounded with the verb 'is'. Also, '[Of] forty {of} a hundred men left the divine Achilles' is divided if 'men' is compounded with 'forty' and composite if 'men' is compounded with 'hundred'.

But one may still have doubts, for it seems that in the previous examples there is an actual ambiguity of words, because the utterance here is the same in matter, namely, in its letters, syllables and words, and it is the same also in form, for in both cases we utter the words in the same order and with the same accents, although there is a diversity in the construction, namely, in construing the word 'now' or the word 'always' with different verbs.

But I reply that if the previous propositions are uttered or written continu-

46. Unfortunately, this does not hold for English—nor even always for Latin.

ously, then by virtue of their proper meaning they do not have diverse senses nor any ambiguity. For if they are uttered or written continuously, without an intervening pause or a comma, then by virtue of their proper meaning they have only the composite sense, since the constructions agree with more appropriate positions. For example, 'Whatever lives always is' by virtue of its proper meaning does not have any other sense except that according to which 'always' is construed with 'lives', nor does 'Whoever knows letters now learned them' have any other sense but the one according to which 'now' is construed with 'learned'.

But if these words are not uttered continuously, but some signs of division are interposed, such as a pause in pronouncing or a comma in writing, inserted between the words which according to their appropriate position would be compounded if the uttering or the writing were continuous, then these expressions would have only the divided sense by virtue of their proper meaning. For example, the proposition 'Whoever knows letters now, learned them' does not have any other sense but the one according to which 'now' is construed with 'knows', for the comma indicates its division from 'learned'. In the same way, the expression 'Whatever lives, always is' does not have any other sense but the one according to which 'always' is construed with 'is'; and thus also the expression 'Forty, of a hundred men[,] left the divine Achilles' has only the sense according to which 'men' is construed with 'hundred', and so on for other cases. And this is how we should understand the difference between actual ambiguity, in the fallacy of amphiboly, and potential ambiguity, in the fallacies of composition and division.

The second mode of these fallacies is also clear enough on the basis of the examples given with it. We should note, nevertheless, that this mode, insofar as we commonly recognize it as occurring between the composite and divided modals, can come about in two ways: in one way, as in the composed and divided [proposition], we keep not only the same letters, syllables, and words, but also the same positions of the words when placing them before or after each other; in the other way, although the same letters syllables and words are preserved, the same order of words, in their arrangement before and after each other, is not preserved.

For example, where the first of these modes is in question, the spoken utterance 'For a white thing to be black is possible' can be uttered or written in two ways: either continuously, without a pause or a comma, and then it is composite and its sense is that the whole [phrase] 'for a white thing to be black' is the subject; or in the other way, with a pause or a comma immediately following the word[s] 'white thing', namely, 'For a white thing, to be black is possible' and then the proposition is divided, so that the word[s] 'white thing'

taken alone are the subject by virtue of the proper meaning [of the whole proposition], for which reason 'black' has to be the predicate. And thus, by virtue of its proper meaning, the proposition 'For a white thing, to be black is possible' is equivalent to 'A white thing can be black'. An example of the other of these ways occurs when both of these propositions, namely, 'For a white thing to be black is possible' and 'A white thing can be black', are uttered or written continuously, without any sign of division, and then the first in comparison with the second is called 'composite' and the second in comparison with the first is called 'divided'. But this is how we commonly speak in modern times, and this is not an example in which something is said wrongly, but rather correctly in both cases.

As to the examples 'Socrates white will be tomorrow' [*Socrates albus erit cras*],[47] 'Man rational is not' [*homo rationalis non est*],[48] 'A man white begins to be' [*homo albus incipit esse*],[49] we have to say that if they are uttered continuously, then they are composite, and their subjects are '[the] white Socrates', 'rational man', and 'white man', respectively. Otherwise they can be uttered or written with a sign of division immediately following the first word, namely, thus: 'Socrates, white will be tomorrow', 'A man, rational is not', 'A man, white begins to be', and in this way they all are divided and by virtue of their proper meanings are equivalent to the propositions 'Socrates tomorrow will be white', 'A man is not rational', and 'A man begins to be white'.

Similarly, the third mode is also quite clear on the basis of its examples. But as to how the composite and the divided [senses] differ by virtue of their proper meanings on the basis of the way they are uttered or written, I say, just as I said earlier, that if the proposition is uttered or written continuously, then by virtue of its proper meaning it is said to be composite, and it has to be construed as the composite sense requires, and it is properly categorical; but if a sign of division is interposed between the words that can be subjected or predicated together or separately, then it is divided, and by virtue of its proper meaning it is equivalent to a hypothetical.

For example, if we write as follows: 'Five are two, and three', then this proposition is to be construed with respect to the first predicate [as saying] that five are two, and with respect to the second predicate the subject has to

47. The original may mean either that Socrates will be white tomorrow or that the white Socrates will be tomorrow.

48. The original may mean either that a man is not rational or that a rational man does not exist.

49. English syntax again excludes the ambiguity of the original, which may mean either that a white man begins to be or that a man begins to be white.

be taken up again so that the proposition should say that five are three. In the same way, if I say: 'Two, and three are five', this has to be construed as saying that two are five and three are five. And if I say: 'Blackie, and Tawny cost ten pounds', then this has to be construed and supplemented by virtue of the division so that [it says that] Blackie costs ten pounds and Tawny costs ten pounds. Again, if I say: 'Every animal is rational, or irrational', then this has to be construed and supplemented so that [it says that] either every animal is rational or every animal is irrational; and so on in other cases.

Again, the fourth mode is obvious. Here the composite [proposition] is uttered continuously, as described above; but in the divided [proposition] a sign of division has to be placed immediately after the subject or word that is all we want to be infinitized. For example, the following is composite: 'Not, man is an animal', and it is a universal negative, equivalent to 'No man is an animal', whereas the following is divided: 'Not man, is an animal'; it is an indefinite, equivalent to 'Something that is not a man is an animal'.

Again, in the fifth mode a hypothetical proposition is composite if it is uttered or written continuously, and it is divided if a sign of division is placed immediately after the first categorical, as in the following example: 'Not man is a horse, or [a] donkey is an animal.'[50]

Yet again, in the sixth mode, if we want to convey the composite sense, then we utter the proposition continuously, and if we want to convey the divided sense, then we should put a sign of division immediately after the first categorical, as in the following example: 'A man is a donkey, and a horse is a goat or God exists'. But if the sign of division were not placed immediately after the first categorical, but after the second, in this way: 'A man is a donkey and a horse is a goat, or God exists', then the proposition would still be composite, just as it would be without a sign of division; therefore, that sign of division would be superfluous, unless it were added so as to express more clearly that the first two should be jointly disjoined from the third.

And finally, as to the last section, we should know that if a spoken expression involving materially the same word or expression can be construed with another word or expression together or separately in any other way, the fallacy of composition or division may occur on account of that or a similar [expression]. For to obtain the composite sense it is to be uttered or written continuously, and for the divided sense a sign of division will have to be placed where it properly belongs.

50. Of course, the first clause of this sentence is still ambiguous in the previous way.

7.3.8 The fallacy of accent

(1) For our present purposes 'accent' is taken broadly, namely, for all sorts of significant ways of uttering or writing a word. (2) In these ways of uttering or writing there are four things that can characterize a word. The first is continuity or interruption; thus all incomplex words are to be uttered or written continuously, namely, without any interruption between their letters or syllables, although diverse words always should be written with interruption. The second feature that characterizes a word is the length of time occupied in uttering its syllables, namely, that some are long and some short in their utterance. The third characteristic is aspiration; for a word or a syllable is sometimes written or uttered without aspiration and sometimes with aspiration, as *amo* [love] and *hamo* [angle]. The fourth characteristic is accent properly so called, which is the modulation of an utterance with respect to raising or lowering its various parts. And such accent is usually classified as acute, grave, or circumflex.

(3) The fallacy of accent is therefore a deception stemming from the ambiguity of a word with respect to its accent. (4) The cause of illusion lies in the material identity of a word, and its cause of defectiveness is the taking of that word in diverse forms or with diverse accents to which different significations correspond. (5) The fallacy of accident, therefore, comes about on account of believing, because of the material identity of the word, that it is taken in the same form and signification, whereas it is taken in diverse forms and significations.

(6) Of these fallacies four modes are distinguished. The first occurs when what is materially the same utterance can be one word or two words and can be written continuously or with an interruption, as in *usurarius habet dilectionem non supernam, sed super mnam* [the usurer has not supernal love, but love for money]. (7) The second occurs when a syllable can be long or short in its utterance, as with *mora* ['delay' with short *o* and 'blackberries' with long *o*] in this verse: *sunt matura mora, pira, ficus, amygdala, mora* [These are ripe late: pears, fig, almonds, blackberries]. (8) The third mode occurs when a word is uttered or written with or without aspiration, as in *quidquid hamatur hamo capitur, puella amatur; ergo hamo capitur* [Whatever is hooked is caught by a fishhook; a girl is loved (hooked); therefore, she is caught by a hook]. (9) The fourth mode stems from the different accentuation of words with respect to the raising or lowering of the pitch of the sound, in accordance with which a word can be uttered with an acute, grave, or circumflex accent.

The eighth part is about the fallacy of accent, and it has many sections. The first describes 'accent' broadly speaking, for it has to be taken thus if it is to cover all the modes of fallacies that stem from the potential ambiguity of some

incomplex word. In this sense, therefore, accent is a significant mode of uttering or writing an incomplex word. And that significant mode of uttering or writing belongs to the form of a word. Therefore a materially identical word is not absolutely identical in its utterance if it is uttered with different accents, as for example 'liber', uttered with its first syllable short ['book'] or long ['free']. I said, therefore, that accent is a mode of uttering or writing an incomplex word, for it is [such a modification of] incomplex words that pertains to this fallacy. And I said 'significant mode' so as to distinguish it from singing, in which the raising or lowering of the pitch of a voice does not make a difference in signification but only in the enjoyment of listening, and thus it does not give rise to a fallacy.

The second section distinguishes four modes of accent taken in this broad sense, correlated with the four characteristics that we said may apply to a word. The third section describes the fallacy of accent. The fourth identifies its cause of illusion and cause of defectiveness. The fifth shows how this fallacy arises. And all these are quite clear. The other four sections sort out the four modes of this fallacy.

In the first mode the following paralogism can be formed: *omnis quies est requies, tu es qui es; ergo tu es requies* [Every quietude is rest; you are who you are; therefore, you are rest]. The argument is invalid, for if the utterance *quies* were one word, the major would be true and the minor would be false or ungrammatical [for then the minor would say that you are quietude], and if it were two words, the major would be false or ungrammatical [for then it would say that everything who you are is rest], and the minor would be true. The case is similar with *omnis habens dilectionem supernam est bonus homo; usurarius habet dilectionem super mnam; ergo est bonus homo* [Everybody having supernal love is a good man; the usurer has love for money; therefore, he is a good man].[51]

In the second mode one argues as follows: *quicumque vult jacere debet sumere lapidem, infirmus vult jacere (quia non potest se sustinere stando vel sedendo); ergo debet sumere lapidem* [Whoever wants to throw (lie) down has to take a stone; a sick person wants to throw (lie) down (for he cannot hold himself up standing or sitting); therefore, he has to take a stone]. The argument is not valid, for if *jacere* is uttered with its middle syllable short, then the major is true and the minor is false, and if it is uttered with its middle syllable long, then the major is false and the minor is true. And we should note that the word *jacere* is diverse in its form when uttered but not when written, and hence in writing it is equivocal. Thus words dissimilar in this way do not have a formal difference either in writing or in prosaic speech, for they are always uttered with

51. J. Buridan, *Questiones Elencorum,* ed. R. van der Lecq and H. A. G. Braakhuis (Nijmegen: Ingenium, 1994), 12.3.4.3, pp. 61, 76–86.

the first syllable long, and thus they are like equivocal [terms], but it is rather in scansion that they have such a formal difference along with an identity that is merely material.

In the third mode the following paralogism was presented: *Quidquid hamatur hamo capitur, puella amatur; ergo puella hamo capitur* [Whatever is fished is caught by a fishhook; a girl is loved (hooked); therefore, she is caught by a hook]. Here the words *hamatur* and *amatur* are said to be materially the same by the grammarians who say that *h* is not a letter. But to prove or reprove this point does not belong to the present discussion.

As to the fourth mode, it is obvious that many poets and philosophers often put forth false propositions in an interrogative manner, and thus, if, because of the authority of these authors, someone assents to these propositions as if they had been put forth assertively, then he will be deceived. For these expressions, which are materially the same, are different in form, since in a question the last word is uttered at a high pitch, whereas in an assertion it is uttered at a low pitch; in writing, however, a question has a question mark after the last word, whereas the assertion has a full stop.

To this mode belong also differences in utterances variously appropriate when we are commanding something, or asking something, or when we are angry, or ironic, and so on for the numerous other fashions [of expression].

7.3.9 The fallacy of figure of words

(1) What in the present context is called 'figure of words' is the similarity of one word to another, although they differ materially from each other. (2) The fallacy of figure of words is a deception resulting from the similarity between words and the dissimilarities between their significations or consignifications. (3) The cause of illusion in it is the similarity of words and the cause of defectiveness is the dissimilarity within their significations or consignifications. (4) This fallacy therefore comes about on account of a belief that because of the similarity between words they are similar in their signification or consignification, when in fact they are not.

The ninth part, which is about the fallacy of figure of words, has four sections. The first shows what we mean by 'figure of words' here, namely, a similarity of one word to another. And it is not necessary to restrict 'words' to incomplex utterances, but one may extend it to all spoken expressions, in the way in which we said that 'word' is taken broadly in the distinction between fallacies that are said to be 'of words' and 'apart from words'.

We do not here call just any sort of similarity between words a 'figure of words', however, but that between words differing in matter. For if they were identical both in matter and form, then it would not be called a 'figure of words' but equivocation or amphiboly, nor would we say that there is here an imaginary ambiguity, which is appropriate to this fallacy, but an actual one. Similarly, if there were an identity in matter and a diversity in form, then it would not be called figure of words, nor an imaginary ambiguity, but rather composition or division or accent, and potential ambiguity. This is why it was said to occur 'though they differ materially from each other'.

Again, since nonsignificative utterances are not called words but are only so called because they are imposed to signify, on the basis of their essential modes of signification, without which they cannot be imposed to signify, it therefore seems to me that the similarity of words is not sufficient for the occurrence of this fallacy, but that there is also needed an agreement in their mode of signification, at least in the essential mode of signification. For nobody, unless he is totally ignorant of Latin, would believe that *homo* [man] and *amo* [I love], because of their similar ending, would have similar significations or consignifications, and the same goes for *domus* [house] and *legimus* [we read], or *fortiter* [strongly] and *niger* [black], and their likes. This is why we spoke about 'the similarity of one word to another' and not just about the similarity 'of one utterance to another'.

The second section describes the fallacy of figure of words as a deception resulting [from the similarity between words and the dissimilarities between their significations or consignifications]. And you should supplement and expound this in accordance with what has just been said about its resulting 'from the similarity of words sharing the same essential mode of signification'. And in the same way you should supplement the third section, which deals with the cause of illusion, and the fourth, which declares how this fallacy comes about.

7.3.10 The modes of the fallacy of figure of words

(1) Various people variously specify the modes of the fallacy of figure of words. (2) And some paralogisms are included in this fallacy that perhaps do not belong there; so it is not easy to enumerate all the particular modes in which this fallacy arises, but I will enumerate some that appear to me the commonest.

(3) Thus the first mode occurs when because of their similar endings,

words are believed to have similar accidental modes of signification, whereas they do not. For example, in the case of names, because *musa* [muse] and *domina* [lady] are of the feminine gender, we believe that so also are *pascha* [Easter], *poeta* [poet], and *dogma* [dogma]; and in many cases the cause of illusion is strengthened by a similarity of declension, as is the case with *musa, musae, pascha, paschae, poeta, poetae.* The case is similar where verbs are concerned, for example, because *amare* [to love], *docere* [to teach], and *legere* [to read] are active, we might think that so too are *sonare* [to sound], *sedere* [to sit] and *tonare* [to thunder].

(4) The second mode occurs by sharing with the first the same cause of illusion, when, because of the similar ending of words, they are believed to have the same categorical signification in cases where they do not have it. For example, since *secare* [to cut] and urere [to burn] signify action, we might believe the same about *amare* [to love] and *intelligere* [to understand], and just as *secari* [to be cut] and *uri* [to be burned] signify being affected [*pati*], [we may think that] so do *amari* [to be loved] and *intelligi* [to be understood], and just as *album* [white] and *calidum* [warm] signify quality, [we may think that] so do *bicubitum* [two cubits long] and *tricubitum* [three cubits long].

(5) The third mode comes about if we believe that to similar grammatical modes of signification, although they involve words that do not sound similar, there correspond similar significations. Examples occur when we believe that all active verbs signify action and all passive verbs signify passion [being affected, being acted upon], or that since the genitive case in the expression 'a man's donkey' signifies the relation of a possessor to a thing possessed, we might believe that it signifies thus also in the expressions: 'the money's recipient', 'Robert's father', 'the city's sovereign', etc.

(6) Again, the fourth mode arises when, because of the similar sound patterns of categorical distributives,[52] we believe that similar terms should be subsumed under them (for the distributives *quodcumque, quotcumque, quantumcumque, qualecumque, quandocumque, quotienscumque, ubicumque* [whatever, however many, however much, of whatever quality, whenever, however many times, wherever] sound similar); or, conversely, when because of the similar sound pattern of terms we believe that they can be subsumed under the same distributive, in cases where this is not so, or again when, because of the similar sound pattern of terms subsumed under the same or similar distributives, we believe that syl-

52. That is, phrases that distribute terms belonging to various categories.

logisms and consequences framed in similar forms concerning them are valid.

(7) And a fifth mode is posited if on the basis of the similar relations of words to other words we believe that similar propositions and consequences will be true in both cases, and that likewise similar ones will be false, etc. For example, since just as *anima* [soul] is related to *animatum* [ensouled], *albedo* [whiteness] to *album* [white], *dulcedo* [sweetness] to *dulce* [sweet], so also *unitas* [unity] is related to *unum* [one], *privatio* [privation] to *privatum* [what is deprived] and *potentia* [power] to *potens* [powerful] (given that in all these cases we have the relation of an abstract [term] to its concrete form), we might believe on this basis that just as no soul is the ensouled thing, and no whiteness is the white thing, so also no privation is the thing deprived, and no unity is the thing that is one.

The more detailed specifications of the modes of this fallacy I leave to those who wish to study this problem.

The tenth part has seven sections. The first puts forward what is to be said in the others and also declares that some people assign modes or paralogisms to this fallacy that I do not admit as belonging to this fallacy.

Thus many people say that one mode of this fallacy arises from the change of supposition of some word or other. Accordingly, they say that this fallacy covers paralogisms like 'Man is a species; Socrates is a man; therefore, Socrates is a species'. Similarly, we have 'Every rational mortal animal is a man; rational mortal animal is a definition; therefore a definition is a man'; but here in the major premise, 'rational mortal animal', supposits personally, whereas in the minor it does so materially, insofar as they are both true.

They also say that the following paralogism belongs to this mode: 'An animal is Socrates; an animal is Plato; therefore, Plato is Socrates'; but this is invalid, because 'animal' supposits for different things in the major and in the minor premise, in accordance with what they say. The verdict is similar in this case: 'An animal is Socrates, an animal is Plato, an animal is John, . . . and so on for the others; therefore, an animal is every man'; this is because it proceeds from several determinate suppositions to one determinate supposition. And the case would be similar if one were to say: 'Every man is an animal; therefore, an animal is every man', for in the antecedent 'animal' supposits confusedly but in the consequent determinately.

But it seems to me that such paralogisms in no way belong to this fallacy, unless they are reduced to it from something quite different. For take the paralogism '[A] man is a species; Socrates is a man; therefore, Socrates is a species'; here one could say that it would be invalid even if there were no

change of supposition, on the ground that it is defective in its form, since nothing follows from two indefinites.

But then one would have to make a decision about the other paralogism, which would not be formally defective if the suppositions were not changed. And it is clear that the fallacy does not arise in this context because of some similarity of words or expressions that are diverse in their matter, but because of the formal and material identity of the expression 'rational mortal animal' coupled with the diversity of suppositions. But such an actual identity of utterance is not the cause of this fallacy but rather involves the fallacy of equivocation or amphiboly, as was said above.

As far as the other two paralogisms are concerned, namely, 'An animal is Socrates, an animal is Plato, . . . etc.', it is obvious that they belong not to the fallacies of words but to those apart from words: in this case, to the fallacy of accident; for the deception would occur in the same way, without any consideration of the utterances, if the singular concepts of Socrates and Plato were predicated of the common concept of animal and from this one were to infer one of those singular concepts [to be predicable] of the other, for thus the premises would be true and the conclusion false.

But suppose you wanted to say that just as we are deceived apart from the utterance when we attribute one of the singular mental concepts to the other because they are attributed to a common mental concept, so in the said paralogism we could be deceived on account of the utterances when we attribute one of those singular spoken terms to the other because they are attributed to one common spoken term, and then it would be a fallacy of words. But to those contending in this manner I would reply that in this way we could say of all paralogisms apart from words that they are paralogisms of words, and this I do not take to be correct. Second, I assert that if in these paralogisms there were thus a fallacy of words, it would nevertheless not be the fallacy of figure of words but rather of equivocation, because of the material and formal identity of the utterance, as I asserted previously. Similarly, the conversion 'Every man is an animal; therefore, an animal is every man' does not deceive by words but apart from words, for whatever you could say about the spoken conversion could also be said about the mental conversion, without bringing utterances into consideration.

Therefore, although material supposition pertains to conventionally significative terms, nevertheless, personal supposition, both confused and determinate, along with distributive and nondistributive, pertains to mental terms and propositions but not to spoken or written ones, except derivatively, insofar as they represent the mental ones.

But then again some people are still striving, by means of a long-winded demonstration, to show how the fallacy of figure of words occurs in the above-

said paralogisms, taking their cue from Aristotle's authority in the *Categories*,[53] according to which secondary substances do appear to signify *this something* [*hoc aliquid*] but under the guise of appellation. Thus, they say that common terms, or words, which are called secondary substances, have a certain similarity to, or agreement with, singular terms, which are called primary substances, under the guise of appellation, that is to say, with respect to the predication of one of the other (for secondary substances are predicated of the primary ones); therefore, because of that likeness and agreement, just as a primary substance signifies this something, i.e., in a singular manner, so also a secondary substance does appear to signify this something, just as if it signified in a singular manner.

Therefore, [they continue,] it is because of this similarity between primary and secondary substance that one may come to believe that a syllogistic form valid with a singular term would be just as valid with a common term. For, provided A is a singular term, the following would be a valid syllogism: 'A is Socrates; A is Plato; therefore, Plato is Socrates'; and so would be 'A is Socrates, A is Plato, A is John . . . and so on for the rest; therefore, A is every man'; and likewise would the conversion be valid: 'Every man is A; therefore, A is every man'. Therefore, one might believe that it would thus be valid with a common term, and thus we are deceived by the similarity of one word to another; whence this is a case of the fallacy of figure of words.

But although these contentions are subtly brought together, they do not prove their claim. For community and singularity, and the predication of this of that, do not pertain to terms on account of their being utterances but pertain primarily to mental terms, even excluding significative utterances from consideration, for they belong to spoken terms only derivatively, insofar as they represent mental terms, and these are already naturally common or singular. Under these circumstances, even conceding all the points made above, the fallacies arising from them ought not to be said to be *of* words but rather *apart from* words.

The other five clauses describe five modes of this fallacy. In the first there occur paralogisms such as the following: '*musa* [muse] and *femina* [woman] are of the feminine gender; therefore, so are *pascha* [Easter] and *poeta* [poet]'. The consequence appears to be valid on the ground that these terms have a similar ending and declension, and the nonexpert judges whether names are of the same or of diverse genders only on the basis of their endings, given that this does not derive from their significations, since several names signifying the same thing are of diverse genders, as are *petra* [rock] and *lapis* [stone], and names that have diverse significations are in the same gender, as are *domina*

53. Aristotle, *Categories* 5. 3b13–14.

[lady], *lucerna* [lamp], and *materia* [matter]. But the paralogism is invalid, for, although in most cases names with a similar termination and of the same declension are in the same gender, yet there are many exceptions, and these deceive those who ignore them and push them into solecism. The case would be similar if one were to say that as *vigeo, viges* [I am healthy, you are healthy] has as its past tense *vigui* [I was healthy], and *doceo, doces* [I teach, you teach] has *docui* [I taught], hence so also has *augeo, auges* [I grow, you grow] *augui* [correctly: *auxi,* I grew] (for there seems to be no reason why it should not be that way).

These paralogisms are faulty, because where several terms having similar terminations and belonging to (by and large) similar declensions are concerned, various rules and exceptions apply by convention. The case is similar if someone were to say: *omnis aqua est humida; Sequana est aqua; ergo Sequana est humida* [Every water is wet; the Seine is water; therefore, the Seine is wet; where the conclusion correctly should be *Sequana est humidus*]; for on account of the similar termination it is believed that *aqua* [water] and *Sequana* [Seine] are in the same, namely, the feminine, gender; but they are not, for the conventional rule is that the names of rivers should be in the masculine gender.

Some people say that it is in this mode that we should include the following paralogism: *omnis aqua est humida; fluvius est aqua; ergo fluvius est humida* [Every water is wet; a river is water; therefore, a river is wet, whereas the conclusion correctly should be *fluvius est humidus*]. But it does not seem to me that this paralogism should be assigned to this mode, although it does have a defect similar to that of the previous paralogisms, namely, the placing of something that is in one gender in another, but it does not have a similar cause of illusion, for *aqua* [water] and *fluvius* [river], or *humida* [wet] and *fluvius* [river] do not share a similar termination. But if someone were to be deceived here, this would seem to occur in one of two ways; in one way, because of believing that just as a term in a syllogism has to remain subordinated to the same intention in both the conclusion and the premises, so too it should remain the same utterance. And this mode seems to be the converse of the fallacy of equivocation, where on account of the identity of the utterance it is believed that there should also be the same intention; and thus this mode could be reduced to the fallacy of equivocation. But it is not necessary that this be so, for if the term is an adjective, then it has to be inflected in agreement with the number, gender, and case of its substantive.[54]

The other way in which this deception could occur would be because, just as a middle term is related to both premises, and the minor extreme to the

54. Of course, this holds for Latin. In English the corresponding *regula ad placitum* (conventional rule) is that adjectives are not inflected.

minor premise, so also should the major extreme be related to the major proposition and to the conclusion. But in the paralogism now in question we see that the middle term remains expressed by the same utterance in both premises, as also does the minor extreme in the minor proposition and in the conclusion. This pushes us into believing that the major extreme should also remain expressed by the same utterance both in the major and in the conclusion, or indeed, since in many syllogisms it does remain expressed by the same utterance, we might believe that it should thus also remain in this one. And in this way this paralogism belongs to the fifth mode of this fallacy, which is said to occur on account of the similar relations between one word and another word.

In the second mode of this fallacy there are paralogisms such as the following: *secare est agere; ergo et amare* ['To cut is to act; therefore, so is to love'], *secari est pati; ergo et amari* ['To be cut is to be affected; therefore so is to be loved']; *deus amatur; ergo deus patitur* ['God is loved; therefore, God is affected'] (which is false), and the same goes for *esse album, esse calidum, esse rotundum, esse sanum significant quale; ergo similiter esse tricubitum, vel filium, vel vestitum significant quale* ['To be white, to be hot, to be round, and to be healthy signify to be of some quality; therefore, to be three cubits long, or to be a son, or to be clad also signifies to be of some quality']. And these consequences appear to be valid because of the similar terminations involved; but this appearance, although it is well grounded in many cases, does not hold in all, whence these consequences are not valid.

The illusion involved in the third mode is promoted by the opinion of grammarians who hold that the modes of signification are derived from the modes of being, whence they believe that to similar modes of signification attributed to utterances there correspond similar modes of being in the things signified.[55] They believe, therefore, that the active voice of verbs and the masculine gender of names was taken from action, whereas the passive voice [*genus passivum*] in verbs and the feminine gender in names was taken from passion [*pati*], for the male acts on the female, and the female is affected [*patitur*] by him. Now there are paralogisms [in this mode] such as the following: "'to love'

55. The grammarians referred to here are the *modistae.* See, e.g., G. L. Bursill-Hall, *Speculative Grammars of the Middle Ages: The Doctrine of* Partes Orationis *of the Modistae* (The Hague: Mouton, 1971); G. L. Bursill-Hall, "The Modistae Revisited," in *L'héritage des grammairiens latins de l'Antiquité aux Lumières,* ed. I. Rosier (Paris: Société pour l'information grammatical; Louvain: Peeters, 1988), pp. 215–32; M. A. Covington, *Syntactic Theory in the High Middle Ages* (Cambridge: Cambridge University Press, 1984); C. Marmo, *Semiotica e linguaggio nella scolastica: Parigi, Bologna, Erfurt, 1270–1330* (Rome: Istituto Storico Italiano per il Medio Evo, 1994); I. Rosier, *La grammaire speculative des Modistes* (Lille: Presses Universitaires de Lille, 1983).

and 'to see' are of the active voice; therefore, they signify action," or "'to be loved' and 'to be seen' are of the passive voice; therefore, what is seen or what is loved is affected [*patitur*]." For this is how some people believed that the senses were acting on the sensible objects in the course of sensing them.

But this mode of arguing is defective, for although many verbs in the active voice do signify action, nevertheless, this need not hold for all, indeed, it need not hold even if the names *activum* [active] and *passivum* [passive] may derive their vocal formation from the verbs *agere* [to act] and *pati* [to suffer, to be affected, to undergo (some action, influence, or change)]; they need not for this reason retain their signification with respect to just anything they are attributed to, for names signify by convention [*ad placitum*]. Therefore, the grammarians declare that some names are derived from others by antiphrasis, as is *mons* [mountain] from *moneo, mones* [warn, instruct, advise, etc.], for the former is immovable.[56] And propositions are said sometimes to change the significations of the words of which they are composed. For it is absurd to say that if matter receives form, then its receiving is its acting, even though 'to receive' is an active verb. In this way the same point becomes clarified concerning an argument such as the following: "In the expression 'Socrates' donkey' the genitive case signifies the relation of the possessor to the thing possessed; therefore, it does so also in the expressions 'the ruler of the city' [and] 'Robert's father'." Here the consequence appears to be valid because it is believed that a similar mode of signification should signify a similar mode of being or being related, and thus it would be concluded that the son possesses the father and the city its ruler.

In the fourth mode Aristotle and others posited a great number of paralogisms. Now this mode, in accordance with the distribution put forward here, can contain what looks like three [further] modes. In connection with the first member of the disjunction a paralogism can be constructed as follows: 'How-

56. *Antiphrasis* is a trope based on the similar sounding of words with opposite meanings. Buridan is apparently using the phrase to refer in general to the relationship of such pairs of words. His particular example is still a little bit strange. As the referee for Yale University Press has pointed out, Petrus Helias wrote: "Dicunt tamen plures quod 'mons' dicitur a 'munio munis', eo, scilicet, quod locum qui montes astant muniunt." Petrus Helias, *Summa super Priscianum,* ed. L. Reilly (Toronto: Pontifical Institute of Mediaeval Studies, 1993), p. 112. But this would not be a case of derivation by antiphrasis, i.e., on the basis of opposite meanings, because it derives *mons* (mountain) from *munio* (guard) on the basis that the verb signifies a certain function of mountains, namely, that they guard the place next to them. Good examples of antiphrasis, though not Buridan's particular example, are provided by Isidore of Seville, *Etymologiarum sive originum libri XX* (Oxford: Clarendon, 1911), I.xxxvii, 24–26, apparently based on Donatus, *Ars Grammatica,* III. 6, in H. Keil, *Gramatici Latini* (Leipzig: Teubner, 1864), p. 402.

ever much of [or however big] fingers (or feet) you had yesterday, that much [or that big] you still have [today] [*quantoscumque digitos (vel pedes) heri habebas, tantos habes adhuc*]; yesterday you had ten; therefore, you still have ten'. Positing the case that you lost one this is invalid, for 'however much' [*quantoscumque*] distributes not terms of discrete quantity but terms of continuous quantity,[57] and the term 'ten' is of discrete quantity. For you would have argued correctly if you had said: 'However many fingers you had, that many you have . . . etc.'. Similarly, 'Howsoever [*qualiscumque*] is Socrates, so is Plato; Socrates is other than Plato; therefore, Plato is other than himself', or 'Howsoever Socrates was yesterday, so he is today; but yesterday he was wealthy, and well-dressed, and he was walking, and was the ruler of the city; therefore, so he is today'. This is not valid, since none of these [attributes] is in the category of quality, whence they are not to be subsumed under a distributive [sign] of quality. Similarly, 'Whenever you were in Paris, you were a man; you were twice in Paris, therefore; you were twice a man'. Here the term 'twice' is not in the category of time, whence it should not be subsumed under 'whenever'.

But suppose we argue thus: 'However many times you were in Paris, you were a man; you were twice in Paris; therefore, you were twice a man'; what should we say about this? I reply that if the expression put forward as the major premise is complete in the intellect, which supplies the correlative of 'However many times', namely, the phrase 'that many times', then the syllogism is valid, but the major is false.[58] But if the intellect does not supply that correlative, then the expression is incomplete, and then, because of its incompleteness, it is neither true nor false, for it is not a proposition.

As to the second member of the disjunctive [description] of this fourth mode, we should know that under a distributive of substance, namely, 'whatever', one can subsume a purely categorematic term that supposits for something. Therefore, the following syllogism is valid: 'Whatever runs moves; a white thing runs; therefore it moves', or 'a three-foot-long (clad, sitting, double) thing runs; therefore, a three-foot-long (etc.) thing moves'. But the same cannot hold for terms that imply syncategoremata, or that supposit not only for one thing but for many things taken together, collectively. Therefore, the following is not valid: 'Whatever is, is something [that is] one; a people, or

57. Apparently, this distinction squares quite well with the grammatical distinction between count and mass nouns, which is why the 'much-many' distinction in English may be used to render the *quantum-quot* distinction of Latin.

58. Then the completed premise (which is not expressed by the first sentence of the original argument) would be expressed by the sentence 'However many times you were in Paris, that many times you were a man', that is to say, you were a man as many times as you were in Paris; but of course this is false, for you can be in Paris several times, whereas you can be a man only once (since if you cease to be a man you cease to be).

an army, is; therefore, a people, or an army, is something [that is] one'. Similarly, the following is invalid too: 'Whatever is Socrates is a man; a single, or only one, animal is Socrates; therefore, a single, or only one, animal is a man'.[59]

In this mode, therefore, there occur paralogisms such as the following: 'By whichever eye you see, that [one] you have; but you see by only one, or a single, eye; therefore, you have only one, or a single, eye'. Similarly, if we were to say: 'Whatever is, is something [that is] one; a people is; therefore, a people is something [that is] one', as was just said, or: 'Every number is; therefore every number is something [that is] one'.[60] If, therefore, on account of the vocal similarity of the words *unico* [by a single], *solo* [by the only, by only one], *malo* [by a bad], *bono* [by a good], *sano* [by a healthy], etc., we believe that we can subsume the terms *solo* and *unico* under the distributive [sign] *quocumque* [by whatever, by whichever], just as we can do with the others, then we fall prey to the fallacy of figure of words in this mode. The case is similar with the following negative paralogisms: 'Whichever eye you do not have, by that you do not see, but you do not have a single, or only one, eye; therefore, you do not see by a single, or only one, eye'; again, 'Whatever you do not have you do not give; but you do not have only one, or a single, dollar; therefore, you do not give only one, or a single, dollar'.

In the third member of the disjunctive [description] of this fourth mode are paralogisms such as the following: 'Whatever you bought you ate, but you bought raw [meat]; therefore, you ate raw [meat]'. This mode of arguing is valid with substantial, or nonconnotative, terms, as are the terms *porcum* [pork], *lignum* [wood], *pomum* [apple], *vinum* [wine]. If, therefore, on account of the similar ending you believe that it is also valid with the terms *crudum* [raw], *album* [white], etc., then you will be deceived by this mode of this fallacy. For the defect is caused by the change of appellation. [Therefore the argument] would not be defective if *crudum* were placed on the side of the subject as follows: 'Whatever you bought, you ate, but [it was] raw [meat that] you bought; therefore [it was] raw [meat] that you ate'. And the same would hold for the following paralogism: 'Whatever you bought yesterday, you eat today; [it was] raw [meat that] you bought yesterday; therefore [it is] raw [meat] that you eat today'. For this mode of arguing is valid with substantial terms, but

59. This is invalid because *Solum animal est Socrates* (Only one animal is Socrates) is to be expounded as saying that one animal is Socrates and no other animal is Socrates, which is true; but *Solum animal est homo* (Only one animal is a man) is to be expounded as saying that one animal is a man and no other animal is a man, which is false, if there are also other men besides Socrates.

60. We must not forget that for Buridan *numerus* (number) is a common term that refers to any number of things taken together; it never refers to one thing alone, but only to several things, collectively.

not with connotative ones. But it is not valid with *crudum,* for although *crudum* is correctly subsumed under the distribution on account of what it supposits for, it does not fall under the distribution on account of what it appellates. Whence [the argument] proceeds from an ampliated, nondistributed appellation to a restricted appellation, and the consequence from a more ampliated nondistributed appellation to a less ampliated one is not valid.

In the fifth mode there occur paralogisms such as the following: 'Whiteness is not white; therefore, potency is not potent, nor is privation [*privatio*] deprived [*privata*]'. And the consequence appears to be valid because there is a similar relation between 'whiteness' and 'white' and 'potency' and 'potent', namely, in both cases, there is the relation of an abstract term to its concrete counterpart. Or again, there are cases like the following: "Just as 'cutting' is to 'being cut', so is 'understanding' to 'being understood' and 'seeing' to 'being seen' (for in both cases we have a comparison of an active verb to its passive form); but everything that cuts is acting on what is being cut; therefore, everything that sees or understands is acting on what is seen or understood." Or again, there are cases like the following: "By the expression 'Socrates' goat' it is signified that Socrates possesses a goat; therefore, by the expression 'Thomas's master' it is signified that Thomas possesses his master." And indeed the consequence does appear to be valid, because there is a similar relation in both cases, namely, that of a genitive to a nominative with which it is construed (or by which it is governed) [*a quo regitur*].

Nevertheless, the foregoing notwithstanding, we should note that Aristotle seems to intend [that there should be] one general mode in this fallacy, this being the one the authors commonly posit, namely, the one that occurs whenever the defect arises from changing from one category, or mode of predication, to another. Viewed in this way, this mode would already embrace many of the paralogisms of the aforementioned modes. This is how it came about that Aristotle posited several other paralogisms under this fallacy besides the ones we have presented; it is those that I want to discuss, so that we shall see some of their features.

One paralogism is the following: 'Whatever you had but do not now have you lost; you had ten, but you do not now have ten (having lost one); therefore, you lost ten'. In relation to this paralogism we said that the term 'ten' is not correctly subsumed under 'whatever', for it supposits collectively for many things, as was also said about 'people'. Again, there is a shift here from 'what' to 'how many'. The syllogism would have been valid, however, if one had said: 'However many you had and you do not have, that many you lost; but you had ten', etc.

Another paralogism is the following: 'Whatever you wrote on this page is still on it; you wrote a false expression on this page; therefore it is still there',

it being supposed that on account of the change of the thing [that the proposition signifies] the proposition has become true; for 'false' does not assert [of something] what [it is], but how [it is].[61]

Others are like the following: 'Whatever Socrates walks over, he treads on; Socrates walks over the whole day; therefore, he treads on the whole day', or like this: 'Whatever one drinks, one incorporates; but one drinks a cup; therefore, one incorporates a cup'. These paralogisms are defective according to Aristotle[62] because to walk over the whole day does not signify walking *on* some time but *at* some time, or *during* some time, and to drink a cup does not signify drinking something, but drinking *from* something, as from a vessel. It is in this manner that the mode of predication is changed, namely, [the predication of] what [the thing is] into [one of] when [it is], or whence [it is], or during, or at what time. Thus, [Aristotle] wants to say that under 'whatever' or 'every', one cannot subsume 'in this', 'from this', 'through this', 'of this', 'to this', etc., for that would involve a change in the mode of predication.

But as far as these two paralogisms are concerned, it seems to me that properly speaking they contain a fallacy of amphiboly or equivocation in the second mode. For there is no similarity of one word to another here such that they are diverse in matter and we are deceived by their similarity. But the expression 'He drinks a cup', which is the same in matter and form, should be distinguished, just as also the expression 'The meadow is laughing'; for, taken literally, it would signify incorporating the cup, and the minor would be false, but when taken nonliterally, it is understood to stand for 'He drinks from a cup', just as 'The meadow is laughing' is used in its nonliteral sense to stand for 'The meadow is flowering', and then the syllogistic form is not valid, for the minor would not come under the major. But the mode of predication would be changed without any equivocation if the minor were expressed by the appropriate spoken phrase, namely, 'Whatever he drinks, that he incorporates; he drinks [something] from a cup; therefore, he incorporates [something] from a cup'. And I am not going to worry about discussing whether this inference is valid or not.

But again, although we are speaking in this way about changing categories, it seems to me that many paralogisms of this sort as well as many of the ones mentioned earlier should be classified as being apart from words, namely, as being in the fallacy of accident, not as being of words. For example, if I say, 'Whatever you bought you ate; you bought raw [meat]; therefore, you ate raw [meat]', or 'Whatever you bought yesterday you ate today; you bought raw

61. Although the expression that used to be the false expression on that page is still there, the false expression is no longer there.

62. Aristotle, *On Sophistical Refutations* 24.178b31–34.

[meat] yesterday; therefore, you ate raw [meat] today', or even 'Whenever you were in Paris, you were a man; you were twice in Paris; therefore you were twice a man', and so on in many other cases, then it is obvious that a novice would be deceived by these paralogisms without ever considering the similarity between other sets of words and these ones. Therefore, he is not deceived by the existing or apparent ambiguity of words, whereas Aristotle says that fallacies of words arise in as many ways as there are ways in which we do not signify the same by the same names or expressions.[63]

Again, the principal intentions in the soul are diverse, as also are their distributions and suppositions and appellations, even putting aside the consideration of significative utterances, so when they are naturally left out of account, an inexperienced person who does not know the force of such suppositions and appellations would not think that the term 'raw' changed its supposition in the mental process depending on whether it was placed before or after the mental term 'ate', or the terms 'ate' and 'eat'. And thus he would be deceived by these paralogisms aside from any consideration of utterances, whence they would be apart from words.

I do not assert, however, that in paralogisms of this kind the deception cannot arise because of the words, should someone pay attention to the vocal similarities of distributives or of names subsumed under them, or even to the properties of an utterance consequent upon or concomitant to its conventional imposition, as are the gender of names and the voice of verbs. For there are many verbs, some of which, on account of the intentions by means of which they signify the things that they signify, we classify as active, as for example, *ago* [act], and others that we classify as neutral, as for example, *facio* [make or do], and yet others that we classify as deponent, or as common;[64] and, when it comes to names, we classify some as being in the masculine, some as in the feminine, and some as in the neuter gender, as in the cases of *lapis* [stone], *petra* [rock], and *sidus* [constellation], respectively. The case is similar where the declensions of names and the conjugations of verbs are concerned.

But similar intentions do not thus produce similar or dissimilar suppositions or appellations by convention, except when it comes to material supposition, as was said above. Therefore, we should not deny that where they are concerned and in their connection it is possible that there occur deceptions that we describe as being of words. And since, as was said in one subdivision of this tenth part, it is difficult to specify all the modes of this fallacy, on the part of their illusions or defects, I do not assume the divisions of this fallacy to be so exhaustive and precise that scope would not remain for some of

63. See ibid., 4.165b27–30.

64. See Petrus Helias, *Summa super Priscianum,* pp. 456–57.

its members to overlap or for the addition of some other modes. This is why we said in the previous section that any more detailed specifications of this fallacy are left for others to undertake.

7.4 Chapter 4: On fallacies apart from words

7.4.1 The fallacy of accident

(1) Next we discuss fallacies apart from words, beginning with the fallacy of accident. It was said earlier, in the last part of the second chapter, that the fallacy of accident arises from a defect in the ostensive syllogism with regard to the inference, despite the fact that it appears to be a [valid] syllogism. (2) In this context accident is not taken as being contrasted with substance, nor as, among the predicables, being distinguished from genus, species, difference, and property; nor is it taken for what happens by chance or fortuitously, nor in that broad sense in which it covers any contingent proposition; rather, it is taken for a middle term that is not adequately disposed to render the inference of a conclusion necessary. (3) Thus, the fallacy of accident is a deception arising from the fact that the conclusion seems to follow syllogistically from the premises when it does not follow from them. (4) The cause of illusion in this fallacy is the similarity of the paralogism to a true[65] syllogism, whereas the cause of defectiveness is the lack of the [adequate] syllogistic form, on account of which the conclusion does not follow necessarily from the premises. (5) The fallacy of accident occurs when one believes on the basis of an arrangement of premises and conclusion similar to that in a [valid] syllo-

65. Here I translate literally Buridan's phrase *verus syllogismus,* which may sound somewhat odd to the logically trained reader (who would expect 'valid' rather than 'true' in this context). 'True' in English, however, just as in Latin, also has the broader meaning of 'real', 'genuine' (which is the relevant sense here, in contrast to some appearance). Furthermore, since Buridan assimilates all consequences, including syllogisms, to necessary hypotheticals, he would freely talk about true consequences in the sense in which we would talk about valid inferences. Nevertheless, in subsequent passages, where Buridan's intention is simply to contrast an apparent syllogism with a genuine one, I will translate *verus* as 'genuine'.

gism that the conclusion necessarily follows from them, whereas it does not follow; and thus because of the truth of the premises we often believe that the conclusion is true, whereas it is not true.[66] (6) This fallacy has as many modes as there are ways in which it is possible for an apparent syllogism to deviate from the correct syllogistic form. But this happens in almost innumerable ways; for there are already many ways in which to construct correct and formally valid syllogisms, and there are many more ways in which one can deviate from the right way rather than going straight.

The fourth chapter is about fallacies apart from words; it has seven parts corresponding to the seven fallacies apart from words, and it has an eighth part that deals with the total number of fallacies.

The first part has six sections. The first presents the items to be discussed and recalls what was said earlier concerning the present issue; this is clear enough.

But the illusion of syllogism, by which this fallacy comes about, should not arise from the utterance but rather from the intentions and the things signified, and it would occur in a like manner even if utterances were not taken into account, as was said earlier; were this not so, it would not be called a fallacy apart from words. A paralogism of accident, however, should appear to be a syllogism to the extent that it is an expression consisting of premises and a conclusion in an arrangement closely resembling a true syllogistic form; hence, were it obvious that the consequence is not a necessary one but was enthymematic or inductive or some such other, then this fallacy would not arise, but some other; and then by adding another, overt or implied, premise the inference would be reduced to an apparent syllogism. It is in this way that the distinction of this fallacy from the subsequent ones may be maintained.

The second section shows what we should understand by the name 'accident' when we call this fallacy the 'fallacy of accident'. And the whole passage is clear. Further, its claim is in obvious agreement with what Aristotle says[67] in bk. 1 of the *Sophistical Refutations,* namely, that a paralogism of accident is not an elenchus because it is not a syllogism. He proves that it is not a syllogism by saying: "for it is not necessary that if these are [true], then so is this,"[68] i.e., in a paralogism of accident it is not necessary that if the premises are true, then the conclusion is also true, because it does not follow from the

66. *Et sic saepe propter veritatem praemissarum credimus quod conclusio sit vera, quae non est vera,* following Johannes Rustenburg's correction of the Hubien text.

67. *Et videtur haec sententia consonare ei quod dicit Aristoteles,* following Johannes Rustenburg's correction of the Hubien text.

68. Aristotle, *On Sophistical Refutations* 6.168a34-b4.

premises. And so in bk. 2 of the *Sophistical Refutations*[69] he also says that the one common resolution of every paralogism of accident consists in [pointing out the fact] that it lacks necessity, i.e., that such-and-such a conclusion does not necessarily follow from such-and-such premises.

But in connection with these points one might reasonably wonder why such a middle term [*medium*][70] is titled 'accident'. And I respond that it is so called on the basis of a similarity, since, in bk. 1 of the *Posterior Analytics,*[71] a necessary proposition is called *per se* [by itself], and a proposition that is contingent and not necessary is called *per accidens* [by accident]. Therefore, in a like fashion, a syllogism that concludes of necessity is called *per se,* and one that does not conclude of necessity is called *per accidens,* and its middle term is called *accidens* [accident].

The third section describes the fallacy of accident, the fourth points out its cause of illusion and its cause of defectiveness, and the fifth shows the way in which this fallacy arises. And all these points are obvious if they are qualified in the above-described manner.

The sixth section shows the ways in which these fallacies proliferate. But in this connection we should first note that many people bring under this fallacy many paralogisms that do not belong to it, for example, the following: 'Every being is natural; a statue is a being; therefore, a statue is natural'; but they are wrong, for this is not a paralogism but a genuine syllogism, and the conclusion is true, if the premises are true, of necessity.

And they also bring the following paralogism under this fallacy: 'Man is a species; Socrates is man; therefore, Socrates is a species', which is not really of this sort if the deception arises because 'man' in the major and in the minor is taken in different suppositions, namely, once in material and once in personal supposition. But if someone were to believe that there is a correct syllogistic form here, provided that 'man' is taken in the same sort of supposition in both premises, he would be deceived by the fallacy of accident, for the form is defective, given that the major should not be particular or indefinite in the first figure.

But the paralogism 'Every rational mortal animal is a man; rational mortal animal is a definition; therefore, a definition is a man' is not defective in terms of this fallacy, as they claim, but rather on account of amphiboly, as has been said elsewhere.

They say similar things about the paralogism or syllogism 'Coriscus you

69. Ibid., 24.179a27–32.

70. Johannes Rustenburg's correction for Hubien's *modum.* See section (2) in the main text above.

71. See Aristotle, *Posterior Analytics* I.4.73a35–b24.

know; Coriscus is the one approaching; therefore the one approaching you know'; but this is not correctly said, for this is a formally valid syllogism, in which the conclusion is inferred of necessity.

But you would object that this syllogism and similar ones are said by Aristotle to belong to the fallacy of accident in bk. 2 of the *Sophistical Refutations,*[72] when he says: "expressions like the following depend on accident: 'therefore, you know what I should ask you', 'therefore, you know the one approaching', or 'the one covered'." I respond that by these words Aristotle did not refer to syllogisms like the one formulated above but to paralogisms of this kind, which are defective in syllogistic form, such as the following: 'You know Coriscus; Coriscus is the one approaching (or the one covered); therefore, you know the one approaching (or the one covered)'; similarly, 'You know how many florins you have,[73] and this is what I want to ask you; therefore, you know what I want to ask you'. For such syllogisms are invalid because of the proper appellations of the terms following the verbs 'know', 'recognize', and their likes, of which I spoke in the *Sophistic Exercises.*[74]

Similarly, some people say that the following is a paralogism of accident: 'Every triangle has three angles equal to two right angles; an isosceles is a triangle; therefore an isosceles has three angles equal to two right angles'. But this is not so, for this is a valid syllogism and a valid demonstration, although not *secundum quod ipsum* [with respect to what the thing is].[75] Nor did Aristotle, in bk. 1 of the *Sophistical Refutations,* want to say that this is a paralogism of accident, but rather that the following is: 'Every triangle, insofar as it is a triangle, has three angles equal to two right angles; an isosceles is a triangle; therefore, an isosceles, insofar as it is an isosceles, has three angles equal to two right angles'; but here the defectiveness does not occur in the premises, since they are properly arranged so as to necessarily yield a conclusion, namely, 'therefore, an isosceles has three angles equal to two right angles insofar as it is a triangle'; rather, the defectiveness consists in the inference of a different conclusion, which does not necessarily follow from the premises; therefore, although the arrangement of the premises is not entirely inadequate, it is nevertheless inadequate to support the drawing of such a conclusion.

72. This is actually chap. 24 (179a33–35) in modern editions, which are not divided into two books: "All arguments such as the following depend upon Accident. 'Do you know what I am going to ask you? Do you know the man who is approaching' or 'the man in the mask'? 'Is the statue your work of art?' or 'Is the dog your father?' 'Is the product of a small number with a small number a small number?'" (tr. W. A. Pickard-Cambridge).

73. Following Johannes Rustenburg's correction (reading *habes* for Hubien's *habeo*).

74. See *Sophismata,* chap. 4, pt. 3.

75. See 8.6.4; Aristotle, *Posterior Analytics* I.4.73b29–39.

Similarly, they say that the following is a paralogism of accident: 'Coriscus is different from a man; Coriscus is a man; therefore, Coriscus is different from himself'. And they say this because Aristotle expressly says so in bk. 1 of the *Sophistical Refutations*.[76] But this is not correctly asserted, for this is a genuine syllogism, whence the conclusion necessarily follows, but the major is false. To the point that Aristotle provides this example one can reply in two ways: first, by saying that Aristotle presented it as a formally valid syllogism that is defective in matter and has an obviously false conclusion. But Aristotle intended to convey that the false premise, the major, is apparently proved by a paralogism of accident, which Aristotle immediately appended, and which runs as follows: 'Socrates is a man, and Coriscus is different from Socrates; therefore, Coriscus is different from a man'; but the conclusion does not follow from the premises, since 'man' was not distributed in the premises, but it is distributed in the conclusion. Second, one can say that Aristotle did not present this as a valid syllogism that happens to be defective in matter, but rather as a paralogism of accident, which runs as follows: 'From a man Coriscus is different; Coriscus is a man; therefore, from Coriscus Coriscus is different, and thus he is different from himself'; under this interpretation we would say that our text is corrupt on account of an error committed by a scribe or the translator.

Aristotle also provides other modes, [as] when starting from things that are divided we infer them as being in conjunction with each other, as in the following: 'This statue is a work of art, and it is yours; therefore, it is your work of art', or in: 'This dog is a father, and it is yours; therefore, it is your father'. Such a syllogism does not conclude of necessity on account of its form, although in many cases it is materially valid, and if for this reason someone thinks that it is valid in other cases as well, then he is deceived. And elsewhere we have sorted out the cases in which it is valid and those in which it is not.

We can now see how the modes of this fallacy can be sorted out (although not in detail but only in general terms); this can be done by bringing up the modes of genuine syllogisms that the paralogisms of this fallacy resemble but fall short of. Thus, given that syllogisms can be constructed either with hypothetical or with categorical premises, hence following the model of syllogisms that are constructed with hypothetical premises one can construct a paralogism from division in the following way: 'Either you are a donkey or you are not a donkey, but you are not a donkey; therefore, you are a donkey' (here it looks as though one member of the disjunction is eliminated and hence the other is the conclusion); or thus: 'Every animal is rational or some

76. Aristotle, *On Sophistical Refutations* 5.166b28–34.

animal is irrational, but some animal is not irrational; therefore, every animal is rational'.

Again, on the model of [syllogisms] that could be constructed from hypothetical premises [*ex hypotheticis* {*praemissis*}][77] are constructed paralogisms such as the following: 'Whatever you bought you ate; raw [meat] you bought; therefore, raw meat you ate', or 'Whenever you were in Paris, you were a man; twice you were in Paris; therefore, twice you were a man', or 'Whatever you had and you do not have you lost; ten fingers you had and do not have; therefore, ten fingers you lost', etc. For in these paralogisms the major premises are hypotheticals, if we call temporal and local propositions hypothetical, as has been said elsewhere.[78]

Of syllogisms with categorical premises some are reduplicative, and some are not; some contain oblique terms, and some do not. And after the model of those involving reduplicatives Aristotle puts forth the following paralogism: 'Every triangle, insofar as it is a triangle, has three angles equal to two right angles; a figure is a triangle; therefore, a figure, insofar as it is a figure, has three angles equal to two right angles'. Resembling the syllogisms with oblique terms is the following paralogism: 'Of any contradiction one member is true; but the proposition 'You are a donkey' is one member of a contradiction; therefore, it is true'.

Again, some syllogisms involving nominative terms are modal, some are assertoric, and some are mixed; some are of the present, and some are of the past or future tense; and some are in the first figure, some in the second, and some in the third. And there occur more useless combinations in these than valid moods, as is clear from bk. 1 of the *Prior Analytics.* And all those combinations constitute modes of the paralogisms of this fallacy, as when one argues from purely particular or indefinite premises, or when both are negative, or when both are affirmative in the second figure, or when in the first or the second figure one argues from a particular major, etc.

Again, arguments are sometimes [formed] from divided phrases but conclude to their combination by resembling syllogisms, for[79] they contain two premises and a conclusion, but in these [cases] the conclusion often does not follow of necessity. Therefore, in this connection Aristotle presents paralogisms involving this fallacy, such as 'This dog is a father, and it is yours; therefore it is your father', etc. Now there are many other sorts of genuine syllo-

77. Johannes Rustenburg's correction for Hubien's *ex hypotheticis praedicamentalibus* [from categorical hypotheticals].

78. See 1.7.2.

79. This is following Johannes Rustenburg's correction (reading *quia* for Hubien's *qui*).

gisms [which may be imitated by invalid ones], whence it is obvious how[80] there are, as it were, innumerable modes of this fallacy.

7.4.2 *The fallacy* secundum quid et simpliciter

(1) Since we are about to discuss the fallacy *secundum quid et simpliciter,* let us remark, in accordance with what Aristotle says in bk. 2 of the *Topics,*[81] that what is called 'what is predicated *simpliciter*' [absolutely] is a term without any addition as compared with the same term taken with some addition, and taken with some addition it is called 'what is predicated *secundum quid*' [with respect to something]; examples of the two are 'man' and 'white man', 'white' and 'white with respect to teeth', or 'man' and 'dead man'. (2) The fallacy *secundum quid et simpliciter* is therefore a deception arising from the fact that we believe that what is predicated *simpliciter* follows from what is predicated *secundum quid* or conversely. (3) The cause of illusion is a certain partial identity of what is predicated *secundum quid* with what is predicated *simpliciter,* and the cause of defectiveness is their diversity. (4) The fallacy *secundum quid et simpliciter* arises therefore by believing, on account of the partial identity of what is predicated *secundum quid* with what is *predicated* simpliciter, that the latter follows from the former, although it does not. (5) This fallacy has two modes; one proceeds from what is predicated *secundum quid* to what is predicated *simpliciter,* whereas the other proceeds conversely. (6) And both modes are subdivided in accordance with the relation of the addition to that which is predicated absolutely and to which it is added; and the first mode occurs if the addition is purely restrictive; the second occurs if it is purely ampliative; the third occurs if it entirely alienates the supposition of that to which it is added; and the fourth mode occurs if it meets all of these three conditions, or only two of them.

The second part is about the fallacy *secundum quid et simpliciter,* and it has six sections. The first section presents what we call here *dictum simpliciter* and *dictum secundum quid,* and it is clear enough. From this it is also clear that what is predicated *secundum quid* is related to what is predicated *simpliciter* as

80. This is following Johannes Rustenburg's correction (reading *quomodo* for Hubien's *quod*).

81. Aristotle, *Topics* II.11.115b30–35.

a part-in-mode[82] is to its whole, whether this be really so or merely by similitude. The second section describes the fallacy *secundum quid et simpliciter* and is clear enough; the third determines the cause of illusion and the cause of defectiveness of this fallacy, and the fourth states how this fallacy arises.

Now in connection with these we should note that the partial identity that is said to be the cause of illusion in this fallacy is the inclusion of what is predicated *simpliciter* within what is predicated *secundum quid,* or the inclusion of the concept of what is predicated *simpliciter* within the concept of what is predicated *secundum quid,* as when the word 'man' is included within the phrase 'dead man'. Now this partial identity and inclusion may occur on the level of utterances, in which case, were it to be on account of this vocal agreement that we believed that one followed from the other when it did not, then this fallacy would be of words and would have to be reduced to the fallacy of figure of words; for there would indeed be an agreement, or similarity, between the utterances, while they differed in matter: for an integral part is different from its whole, and the utterance of what is predicated *simpliciter* is an integral part of what is predicated *secundum quid,* indeed, even when merely taking into consideration the matter of the word or the expression.

But such a partial identity or inclusion can hold also between concepts [*rationes*] or intentions [*intentiones*], even while excluding utterances or the consideration of utterances. For the concept of what is predicated *simpliciter* is included in the concept of what is predicated *secundum quid,* either in the nominative or in an oblique case, or with a variation of the verb or term or terms by means of which what is predicated *simpliciter* and what is predicated *secundum quid* are connected in the consequence. For example, let the definition [*ratio*] of 'man' be 'rational animal';[83] then [something] is called a man painted on the wall because it is an image representative of a rational animal, and [something] is a dead man because it was a rational animal and now is not, and [something] is a man to be generated because it is something that now is not a rational animal but will be, and [something] is a man that can be generated because it is something that can be a rational animal and now is not one, and if something is said to be white because it is colored by white-

82. See 6.4.6: "A whole-in-mode is a common term taken without any determination, as in 'A man runs', 'A donkey walks'; a part-in-mode is the same common term taken with some determination, as in 'white man', 'Socrates' donkey', 'runs fast', 'walks gracefully'."

83. Here it seems to be more natural to translate the notoriously ambiguous *ratio* as 'definition' rather than as 'concept', although it seems quite obvious that in this context Buridan just wants to find an unambiguous way of talking about concepts or intentions, so that he can analyze their partial identity in terms of the partial identity of the phrases to which they are subordinated.

ness, then someone is said to be white with respect to his foot, because he has a foot that is colored by whiteness, and so on for other cases. If, therefore, on the basis of this kind of inclusion and partial identity of intentions or concepts [*intentionum, seu rationum*] it were to be believed that one followed from the other when in fact it did not do so, it is obvious that the fallacy would be apart from words, and this is what we call the fallacy *secundum quid et simpliciter.*

The fifth section provides an obvious division of this fallacy into two common modes. For if we were to say, 'This is a dead man; therefore, this is a man', we proceed from what is predicated *secundum quid* to what is predicated *simpliciter,* and if we said, 'This is not a man; therefore, this is not a dead man', then we would proceed from what is predicated *simpliciter* to what is predicated *secundum quid.*

The sixth section subdivides these modes. The first mode is exemplified if the addition restricts what is predicated *simpliciter* so that it stands for less than it would without the addition, but not for other things. And then what is predicated *simpliciter* is predicated universally and affirmatively of what is predicated *secundum quid,* but not conversely, as for example 'Every white man is a man', but not 'Every man is a white man'. And in such cases it is obvious that the consequence from what is predicated *secundum quid* to what is predicated *simpliciter* affirmatively is valid, and it is valid negatively in the other direction, being validated by the locus from the part of a whole-in-mode to its whole and conversely, in accordance with what has been said in the treatise on *dialectical loci.*[84] But negatively, the inference from the part of a whole-in-mode to its whole is not valid in cases where the negation would distribute both the part and the whole, nor is it valid affirmatively in the other direction.

In the first mode of this fallacy, therefore, there are paralogisms like the following: '[This] is not a white man; therefore, [this] is not a man', or '[This] is not a man; therefore, [this] is not', or even '[This] is a man; therefore, [this] is a white man'.[85] And there are other, less perspicuous paralogisms in this mode in which the negation is covertly implied, for example, 'I make Socrates a warm man; therefore I make Socrates a man'. For the strong appeal of this argument is based on the fact that every warm man is a man, but the

84. See 6.4.2.

85. In these examples, Buridan (following the common practice of medieval logic) uses incomplete sentences, such as '____ non est homo; ergo ____ non est', i.e., '____ is not a man; therefore, ____ is not' (the blanks are my addition), apparently to indicate the formal character of the rule, i.e., the fact that it holds for these predicates for any substitution of their (missing) subject. (To be sure, in Latin, the conjugation of the verb clearly indicates the grammatical number and person of the implied subject.) In the translation, however, I supplied the demonstrative pronouns (which, because of their context dependence, are just as indeterminate as the blanks) for smoother reading.

antecedent is true and the consequent is false, {for I do not make Socrates a man}[86] when I warm him up by my fire. This argument is invalid, because the verb 'make' connotes a negation that affects the term which signifies what I make; for the following is valid: 'I am making a man; therefore, he is not [yet] a man'; 'I am making a man warm; therefore, he is not warm, or at least he was not warm immediately earlier'. Likewise in this case: 'Socrates begins to be a white man; therefore, Socrates begins to be a man', or 'He begins to be a man; therefore, he begins to be'. Similarly with this: 'Socrates is other than a white man; therefore, Socrates is other than a man', or conversely, 'Socrates is not other than a man; therefore, he is not other than a white man'; likewise, 'Only a man is a rational animal; therefore, only a man is an animal', etc.

The second mode occurs if the addition is purely ampliative, as are 'opinable', 'intelligible', 'possible', and many others. For in these what is predicated *secundum quid* is universally predicated of what is predicated *simpliciter,* but not conversely. Therefore, the consequence is valid affirmatively from what is predicated *simpliciter* to what is predicated *secundum quid,* yet it is valid negatively in the other direction; and it is not valid affirmatively from what is predicated *secundum quid* to what is predicated *simpliciter,* nor is it valid negatively in the other direction, for it would then constitute a case of the fallacy *secundum quid et simpliciter.*

Whence arise the following paralogisms: 'The Antichrist is possible; therefore, the Antichrist is', or 'The vacuum is an opinable being; therefore, the vacuum is a being', or, conversely, 'The vacuum is not a being; therefore, the vacuum is not an opinable being'; they arise because every being is opinable or intelligible, but not everything that is opinable or intelligible is a being. For the verb 'is', or the name 'being' construed with the verb 'is', without any addition, is predicated only of present things, but the additions 'opinable', 'opined', 'intelligible', 'understood', 'knowable', 'known', and their like make [the terms to which they are added] stand not only for present things but also for past and future things, or even for things that never will be or were, but can be.

Some people also put in this mode the following paralogism: 'A chimera is an opinable being; therefore, a chimera is a being', or 'A chimera is opinable; therefore, a chimera is'. But I do not mind this one, for the antecedent is as impossible as is the consequent, as has been said elsewhere.[87]

The third mode occurs when what is predicated *simpliciter* supposits for none of the things for which what is predicated *secundum quid* supposits, as when the terms 'man', 'horse', and 'stone' predicated of their subjects by the

86. This was added by Johannes Rustenburg.

87. *Sophismata,* chap. 1, Fifth conclusion.

mediation of the verb 'is' supposit only for present things, but these are not supposited for by the terms 'man to be generated', 'dead horse', and 'destroyed stone'; the case is similar should I say 'A syllogism is a syllogism defective in form'.[88] In these cases therefore, the consequence is not valid affirmatively when one goes from what is predicated *secundum quid* to what is predicated *simpliciter;* neither does it hold in the other direction, but it is valid negatively.

Therefore, the following paralogisms are in this mode: 'Caesar is a dead man; therefore, he is a man'; 'The Antichrist is to be generated; therefore, he is'; 'A paralogism of accident is a syllogism defective in form; therefore, it is a syllogism'. Likewise, one has: 'Whoever says that God is says the truth; therefore, whoever says that God is and a man is a donkey says the truth', or thus: 'Whoever says that God is not says a falsehood; therefore, whoever says that God is or God is not says a falsehood'; for in material supposition the expression 'that God is' [*deum esse*], taken *simpliciter,* supposits for the proposition 'God is', and with the addition 'and a man is a donkey' the whole phrase supposits for the conjunctive proposition 'God is and a man is a donkey'.

But it would appear that this solution is not good. For whoever says a whole expression says every part of it too; therefore, someone who says 'that God is and a man is a donkey' says that God is, whence he says something true.

I say that we have to distinguish two equivocal senses of the term 'who says' or 'to say'. For 'to say' in one sense signifies the same as 'to utter' [*proferre*] a sound, and he who says some utterance in this sense also says any part of it; in the other sense, 'to say' signifies the same as 'to state' [*enuntiare*], and in this sense it is only a proposition that is said, and whoever says a whole proposition in this sense, does not say any part of it. Thus we asserted elsewhere[89] that no part of a hypothetical proposition is a proposition, but it would be a proposition if it were uttered in itself, separately. This, therefore, is [an instance of] the fallacy *secundum quid et simpliciter:* 'Socrates states that God is and a man is a donkey; therefore, Socrates states that God is'.

In the fourth mode one has the following expression: 'Socrates is white with respect to his teeth; therefore, Socrates is white'. I then posit that Socrates is an Ethiopian, and is very black, whence that consequence was not valid, for the addition 'with respect to his teeth' makes the term 'white' stand for many others for whom it would not stand were it not for that addition, e.g., for Ethiopians or for Indians. And in this regard it is like an ampliating addition,

88. The term 'syllogism' without any addition supposits only for formally valid syllogisms, but with this addition it supposits for expressions resembling a proper syllogism in their arrangement but that nevertheless are formally invalid.

89. See 1.7.1.

but it is not absolutely [*simpliciter*] ampliating; rather, it is very restrictive, for the term 'white' taken *simpliciter* supposits for the wall, milk, wine, etc., for which the term 'white with respect to his teeth' cannot supposit. Therefore it would be a case of the fallacy *secundum quid et simpliciter* to argue as follows: 'The wall is not white with respect to its teeth; therefore, it is not white'. The case is similar with a shield, one half of which is white and the other black, were one to argue thus: 'The shield is white with respect to its one half; therefore, it is white; and it is black with respect to its other half; therefore, it is black'; the defect is that it is neither white, for then it would on the same grounds be black, nor black, for then it would on the same grounds be white; this would make it out to be white and also black, which is impossible.

But were you then to conclude: 'therefore, it is not colored', then I would deny the consequence. But then you will go on to prove it as follows: 'for if it is not white, then it is not colored by whiteness, and if it is not black, then it is not colored by blackness, nor by any other color; therefore, it is not colored by any color, but if it were colored, it would have to be colored by some color, just as it is necessary that if there is color in a body, then it is in some body, as is said in the *Categories*'.[90] I reply that it is colored, however, not by some color, but by some colors; therefore, this is a [case of the] fallacy *secundum quid et simpliciter:* 'it is not colored by some color; therefore, it is not colored', or even this: 'it is colored; therefore, it is colored by some color', and this is in the first mode, for the addition of 'by some color' restricts 'colored'; for anything colored by some color is colored, but not conversely.

We should note that Aristotle, in bk. 2 of the *Sophistical Refutations,* touches on many sophisms that belong to this fallacy. For he mentions the sophism 'I say something false' and 'I swear that I am perjuring myself', which are called insolubles, which we are to discuss in detail in the *Sophistic Exercises,* and there we shall see that they are false and not true. Nevertheless, a sophist might argue in the following way that they are true: 'Someone who says that he says something false says something true insofar as he asserts that he says something false, for it really is the case that he says something false; therefore, he says something true'; or in the following way: 'Someone who says that he says something false says something true insofar as the proposition signifies that he says something false; therefore, he says something true', and the case would be similar with the perjuring. Thus the consequence is not valid, for, as will be said elsewhere,[91] his proposition signified something else on account of which it was false, namely, that it was itself true. And the case would be similar were we to argue: 'The usurer is a good man insofar as he lives

90. Aristotle, *Categories* 5.2b1–2.

91. *Sophismata,* chap. 8, Seventh sophism.

chastely with his wife; therefore, he is a good man'; this does not follow, for he does something else on account of which he is a bad man and hateful to God. Again, the case would be similar were we to say "The proposition 'Every animal is rational' is true with respect to all humans'; therefore, it is true," and so on for similar cases.

But you will ask: "What is it that such propositions signify *secundum quid?*" And I say that 'The usurer is a good man insofar as he lives chastely with his wife' signifies that the usurer would be good on account of chastity, if there were no other acts or other circumstances rendering him bad. The assertion: "The proposition 'Every animal is rational' is true with respect to all humans" signifies that it would be true if there were no other animals to make it false, and so forth.

If, therefore, you were to ask to which of the aforementioned four modes these paralogisms belong, I would reply, with reference to both these and the subsequent ones, that you should consider the predications of what is predicated *simpliciter* and of what is predicated *secundum quid* and transform them into an infinitive construction [*in infinitivo modo*]. Then, if that which is predicated *simpliciter* is truly and affirmatively predicated of that which is predicated *secundum quid,* we have a case of the first mode. If conversely, then we have a case of the second mode. If, however, neither is truly affirmed of the other, whether universally, or particularly, or indefinitely, then we have a case of the third mode. If, finally, both are truly affirmed of the other particularly, or indefinitely, but not universally, then we have a case of the fourth mode. For example, everything that is for a man to be white is for a man to be,[92] and everything that is to be, or that is to be a being, is to be opinable, or to be an opinable being. Again, something that is to be white is what is to be white with respect to teeth, and conversely, for example, if Socrates is white and is also white with respect to his teeth. Nevertheless, it is not the case that everything white is to be white with respect to teeth, for we can bring forward the

92. Let us not forget that, according to Buridan's theory, such infinitive constructions refer to the things for which both of the categorematic terms of the corresponding propositions jointly supposit. Thus, for example, 'for a man to be white' (where the corresponding proposition would be 'A man is white') supposits for white men, whereas 'for a man to be [a being]' (where the corresponding proposition would be 'A man is [a being]') supposits for all men. Accordingly, the claim 'Everything that is for a man to be white is for a man to be' would be equivalent to 'Every white man is a man', which is true; hence, here we have Buridan's first case. Similar considerations apply to the subsequent cases. Obviously, this procedure would not work on the basis of the *complexe significabile* theory of propositional signification rejected by Buridan. See *Sophismata,* chap. 1, Fifth sophism, and J. Buridan, *Quaestiones in Aristotelis Metaphysicam: Kommentar zur Aristotelischen Metaphysik* (Paris, 1518; reprint, Frankfurt am Main: Minerva, 1964), bk. 5, q. 7.

counterinstance of wine; nor does it hold conversely, for we have the counterinstance of the Ethiopian.

So let us discuss the case of saying something false, so that others may study the other paralogisms along these lines. In order that we may more briefly and easily dispose of the matter, I propose that in the place of the total subject 'Someone saying that he says something false' we simply use 'A'. And now check whether everything that is to say something true with regard to this is for A to say something true, or conversely, or nothing [that is to say something true with regard to this] is [for A to say something true], or something is such and something is not such.[93] And it seems to me to be a possible case that something is such and something is not such, namely, when someone along with that dictum says that God does not exist and another says [only that dictum] and nothing else.[94] But these points are to be further investigated in the *Sophistic Exercises.*

We should also note that these four modes admit some further qualifications, in connection with which Aristotle, in bk. 2 of the *Sophistical Refutations,*[95] touches on some paralogisms, or sophistic arguments. That is to say, because locutions are to be understood in accordance with their subject matter, it is well known that those who speak in a theoretical manner do not distinguish between particular and indefinite propositions where truth and falsity are concerned, but those who speak in a practical manner, about human actions, or morals, as do lawyers, jurists, and common people, strongly distinguish between them; for when they assert an indefinite proposition, they intend that it be true universally or in most cases, but when they assert a particular proposition, they seem to intend that it be true, but only rarely, or in a few cases. It is in this way that we say that children should love their parents, and, in accordance with common usage, it would not be right to say that some children should love their parents; and, conversely, we would never assert that children should hate their parents, but we could correctly say that some children should hate their parents, namely, if the parents are obstinate in malice against those children, as well as against others, and against God.

Therefore, it is in this context and in connection with such a style of speak-

93. That is, you should check whether everybody who says something true when uttering some proposition or other is A saying something true, where A holds the place of the phrase given by Buridan above.

94. That is, we have in this case two persons, one of whom says: 'I say something false. God does not exist', whereas the other says merely 'I say something false'. In this case, according to Buridan, the first of these is such that he says something true when uttering this proposition and is A saying something true (where A holds the place of 'someone saying that he says something false'); the other is not such.

95. Aristotle, *On Sophistical Refutations* 25.180b8ff.

ing that Aristotle touches on certain sophistic arguments. One such argument is based on the assumption that an aggressive tyrant occupies a city and orders all wealthy and healthy people to be killed and all poor and ill people to be spared; under such circumstances, the following would be a case of the fallacy of *secundum quid et simpliciter:* 'It is bad to be healthy and wealthy in this city this day; therefore it is bad to be healthy and wealthy'. The consequence is invalid relative to this manner of speaking, for thus the antecedent is true and the consequent false; but it would be valid if there were no distinction between a particular and an indefinite proposition, for in that way an indefinite is taken to be true, even though this should be with respect to a single suppositum.[96] The case would be similar if someone were to assert the following: 'Drinking wine is not good for someone feverish; therefore, drinking wine is not good', or 'It is bad for someone feverish; therefore, it is bad', and so forth, in many other cases.

There is yet another important qualification to be made: in cases in which the healthy and the sick (whether in soul or in body) make contrary judgments, we should accept the judgment of the healthy as *simpliciter* true, and not the judgment of the sick. In the same way, when it is not the case that the same things are good or bad, expedient or inexpedient, pleasant or unpleasant for the healthy and for the sick, respectively, we say that the things are *simpliciter* good, expedient, and pleasant that are such for the healthy, and not those that are such for the sick, and we say that the things are *simpliciter* bad, inexpedient, and unpleasant that are such for the healthy, and not those that are such for the sick; and we should assert this both with respect to the healthy and the sick in body and with respect to the healthy and the sick in soul, of which virtuous and vicious people are examples.

Along these lines, then, arise sophistic arguments such as the following: 'The bitter potion is expedient for the sick; therefore, the bitter potion is expedient', 'To the sick, health is more desirable than philosophy; therefore, health is more desirable than philosophy'. Similarly, concerning the sick in soul: 'Overly delicious and excessive foods and drinks are pleasant for the intemperate; therefore, they are pleasant'. For this is how Aristotle, in bk. 7 of the *Ethics*,[97] teaches us to maintain that all pleasures are good and all unpleasant things are bad: for if you were to argue that they are not, saying that people pursue dishonest things for the sake of pleasures and recoil from honest things by distress, Aristotle says that we should deny this, for pleasures

96. Then the conclusion would be equivalent to: 'It is bad to be some healthy and wealthy person'; and indeed, under such circumstances this would be true of the healthy and wealthy persons of the city in question.

97. Aristotle, *Nicomachean Ethics* VII.11–15.

that incline one to dishonest things are not pleasures, because they are not pleasant for good people; indeed, [good people], rather, abhor them. And if you say that they are intense pleasures because they strongly please people, I say that this is to be denied, while admitting that they strongly please bad people and for them they are the utmost pleasures; still, it does not follow that they please or that they are pleasures [without qualification].

These points should suffice in connection with this fallacy.

7.4.3 The fallacy of ignorantia elenchi

(1) Turning to the discussion of the fallacy of *ignorantia elenchi,* we have in the first place to lay down what elenchus is, and what we call *ignorantia elenchi,* and only then to go on to discuss the rest. What elenchus is was stated in the beginning of this treatise. (2) What we call here *ignorantia elenchi* is not ignorance pure and simple but only the ignorance that, where an argument that appears to be an elenchus is concerned, makes us fail to recognize the lack of some necessary condition for an elenchus, when in fact that lack is present. (3) For it is not the failure of just any condition whatsoever that gives rise to the fallacy of *ignorantia elenchi,* insofar as we distinguish it from other fallacies, but only the failure of some condition necessary for the true contradiction, which an elenchus requires between the proposition proved by the opponent and the position of the respondent.

(4) The fallacy of *ignorantia elenchi* therefore is a deception arising from the fact that the conclusion of the opponent seems to contradict the position of the respondent, whereas it does not in fact contradict it. (5) The cause of illusion in this fallacy is the fulfillment of several of the conditions necessary for a true contradiction, on account of which it is believed that all are correctly fulfilled, whereas the cause of defectiveness is the failure of some of those conditions. (6) This fallacy, therefore, occurs when someone believes that the conclusion of the opponent contradicts the position of the respondent, when it does not. (7) This fallacy has as many modes as there are necessary conditions of a true contradiction, each of which may fail to be met in an apparent contradiction.

The third part is about the fallacy of *ignorantia elenchi,* and it has seven sections. The first lays out the order of the discussion and refers us to the description of elenchus in the first chapter of this treatise and the first subdivision of

that chapter. But we should note that although an elenchus strictly so called is a syllogism, nevertheless, more loosely speaking, any argument proving the contradictory of the thesis of the respondent is called an elenchus, whether it be syllogistic, inductive, exemplary, or enthymematic. And it suffices for the sophist that he appear to produce an elenchus loosely so called against the respondent.

The second section shows what we call *ignorantia elenchi* here, and is clear enough.

The third section indicates two senses of *ignorantia elenchi,* as mentioned also by Aristotle. For the name *ignorantia elenchi* can be taken indifferently, to refer to any fallacy that deceives us on account of the fact that we do not recognize its failing to meet some condition required for a true refutation. And in this sense every fallacy could be called a fallacy of *ignorantia elenchi,* and this is obviously what Aristotle intends in bk. 1, chap. 1 of *Sophistical Refutations,* in the passage: 'Or we should say . . . '.[98] An elenchus therefore requires a necessary consequence and a proof of the conclusion from the premises or premise, and along with this the contradiction between the concluded and proved conclusion and the position of the respondent. Every fallacy fails to meet some one or other of these conditions, for either they do not infer the conclusion of necessity, or they do not prove it, or the conclusion does not contradict the position of the respondent.

In the other sense, the name *ignorantia elenchi* is taken strictly, insofar as it arises solely on the part of the contradiction that the elenchus adds to the demonstrative syllogism, or, in general, to the consequence proving the conclusion. And then it is distinguished from the other twelve fallacies insofar as those arise only on the basis of the inference or the proof of the conclusion. This fallacy of *ignorantia elenchi,* specifically speaking, then, arises from the defect in the contradiction, whereas the others arise from the defect in the syllogism, or, generally, in the argument proving the conclusion. It is in this sense that we wish to discuss this fallacy.

But you may well argue against this. For under these circumstances it would follow that this fallacy would just as much belong to fallacies of words as to fallacies apart from words; but this seems to be false, for Aristotle lists it along with fallacies of words and not with fallacies apart from words. And thus it would also follow that it would not be correct to classify fallacies in such a way that some are of words and some are apart from words, since these classes would overlap where this fallacy is concerned. The principal consequence is obvious, for a defect in contradiction can occur with respect to

98. Aristotle, *On Sophistical Refutations* 6.168a17–19.

words just as well as with respect to things, for a contradiction has to involve the affirmation and negation of the same about the same, and here I refer not only to the same name but to the same thing, excluding the use of a synonymous name while insisting on the use of the same name, as declared at the beginning of bk. 1 of the *Sophistical Refutations*.[99] And without doubt, if I were to claim, exploiting one signification of 'dog',[100] that a dog is a fixed star and you, taking it in the other signification, were to say: 'No barking animal is a fixed star, but every dog is a barking animal; so no dog is a fixed star', then you would not contradict me, by reason of the equivocation and the diverse uses of the equivocal name. In the same way, if I conceded a composite affirmative utterance and you demonstrated to me the divided negative, then you would fall short of the contradiction, even if to some it would appear to be a contradiction.

But to these contentions I reply that, without any doubt, these arguments are conclusive. Therefore I concede both the consequence and the consequent, whence I concede that this fallacy can be *of words* in some of its modes and *apart from words* in some others. And this is what Aristotle expressly intends in bk. 1 of the *Sophistical Refutations* when he says: "some will move this locus,"[101] i.e., this fallacy, "so that it is among those that arise from words." And later he says: "therefore, some arise from words for the reason of the apparent contradiction, which was the proper feature of the elenchus; others, however, have to do with the definition of syllogism."[102]

I take it, therefore, that Aristotle put forth these two theses so as to remove some doubt. For, since he enumerated this fallacy among those apart from words, someone might think that it would never arise from words. Wanting to claim that on the contrary, it could do so, he says that it is moved so as to be among those that arise from words. But further in the second thesis he wished to assert that not only sophistic loci, or sophistic arguments, that arise apart from words but also many of those that arise from words arise on the basis of a merely apparent, but nonexistent, contradiction; but this contradiction is a proper feature of an elenchus, and it is always on account of its defectiveness that this specific fallacy occurs; whereas the others occur in connection

99. "For a refutation is a contradiction of one and the same predicate, not of a name, but of a thing, and not of a synonymous name but of an identical name." Ibid., 5.167a23–25; see text at n. 103 below.

100. This signification would be as it is taken to refer to the constellation or some star of the constellation.

101. Aristotle, *On Sophistical Refutations* 5.167a21–23.

102. Ibid., 6.169a20–23.

with the definition of syllogism, these being sophistic loci, or sophistic arguments, which belong to the other twelve fallacies and which occur on account of their falling short not of the contradiction but of the definition and concept of a demonstrative syllogism.

But then you ask, "Why, then, did Aristotle enumerate this fallacy among those apart from words, and not among those of words?" To this one can respond that he did so because in our expressions, where truth and falsity, consequences and oppositions are concerned, we should pay attention more to the intentions than to the utterances, although we should pay attention to both. Therefore, to indicate this, he enumerated this fallacy, which occurs in both ways, along with those apart from words, which occur on account of intentions and of things, and not on account of utterances; however, later on he remarked that it also arises from words.

But next you say that then the division of fallacies into those that arise from words and those that are apart from words is not appropriate. To this I reply that on the contrary, it is, for under the name 'fallacy of *ignorantia elenchi*' are contained all deceptions that occur on account of the defect in contradiction. Some are of words, whereas some are apart from words; this does not hold simultaneously, but rather some are of words, and all the others are apart from words. We could even say that the first division of fallacies, starting from the top, would be into those that occur by falling short of contradiction, and they are contained under the name 'fallacy of *ignorantia elenchi*', and all the others occur by falling short of a demonstrative syllogism, or demonstrative argument. Now Aristotle left the first member of this division undivided when enumerating the twelve fallacies, and the other member he subdivided so that some arise from words and others apart from words, and he did not exclude the possibility that the other member could also be thus subdivided; indeed, he expressly remarked on this, but he did not work this point out, for the sake of brevity. And it would not be inappropriate if we wanted to go on and subdivide this member, or even any other member; this would just increase the number of fallacies.

The fourth section describes this fallacy of *ignorantia elenchi,* and the fifth sorts out its cause of illusion and defectiveness, while the sixth shows how this fallacy comes about. And the whole text is obvious in the light of what has been said.

The seventh section shows how we should sort out the modes of this fallacy. Now Aristotle touched on these modes in describing what a contradiction is. A contradiction is the affirmation and negation of the same about the same, not only with respect to the name but also with respect to the thing and its concept, and not only with respect to the thing and its concept but also with respect to the name. For, as he says, it does not suffice that the names be syn-

onymous,[103] but the contradiction should be with respect to the same name. And in what he appends under the words "[following] of necessity from the [premises], while not including the original point at issue,"[104] he touches on what pertains to an elenchus on account of consequences and proofs, which does not pertain specifically to this fallacy but rather to the other fallacies. But later on he adds that a true contradiction involves not only [predication of] the same about the same [as noted above], but also that it has to be with respect to the same and related to the same, and in a similar manner, as well as at the same time.

Therefore, a contradiction has to be first of all an affirmation and a negation, and thus, if both [claims involved] are affirmative, or both are negative, there is no contradiction. Thus, the first mode arises from the defectiveness of this condition. For example, if the respondent says that a chimera is non-white, he would properly be contradicted by demonstrating that no chimera is non-white, but if someone were to say something else, which seems to be close to the first claim, namely, that a chimera is not white, and you wanted to argue against him by demonstrating the same, namely, that no chimera is non-white, then you would not contradict him, but would be guilty of the first mode of this fallacy, for both [of these propositions] are negative.[105]

But, again, we should realize that it pertains to the concept of a negation that affects a term to distribute it, if the term is not already distributed, and to remove its distribution, if it is distributed, it being understood that the most manifest contradiction of all would be obtained if the negation were put before the whole proposition, so as to affect the whole proposition; therefore, if this is not the way in which it comes about, then, so as still to get equivalent constructions, we have to check not only that one proposition is affirmative and the other negative, but also that whichever term is distributed in one should be nondistributed in the other, and conversely. And it is from the failure to fulfill this condition that the second mode arises, as when the respondent says that in any contradiction either member is true, and the opponent will end in failure if, wishing to contradict the respondent, he demonstrates that in a contradiction either member is not true, since the term 'either member' is not distributed in either [of these two claims].

103. See 7.4.3 n. 99.

104. *Ex his quae data sunt ex necessitate et non connumerato,* in J. Rustenburg's reading. See Aristotle, *On Sophistical Refutations* 5.167a25–26.

105. This is how Buridan shows the usefulness of logical theory in actual disputational practice. If one mistakes a negative proposition for an affirmative proposition with an infinite predicate, then one will not argue correctly against this negative proposition by proving a proposition that is negative in the same way, for of course the latter will not contradict the former.

Next, since we have said "of the same about the same and not only with respect to name, but also with respect to the thing and its concept," it is obvious that if identity with respect to the utterance is maintained, but not with respect to the thing and its concept, then we will have the third mode of this fallacy, which will already not be apart from words but of words. And it can be further divided with respect to equivocation and amphiboly, composition and division, etc., depending on whether that identity of utterance with that diversity of concepts will produce actual, potential, or imaginary ambiguity.

Next, since we have said "of the same about the same and not only with respect to the thing and its concept, but also with respect to the name," it is clear that it is on account of the lack of the identity of the name, if the concept were the same, that the fourth mode of this fallacy would arise, and thus we would have a fallacy on account of synonymy, just as we have one on account of equivocation. Nevertheless, it is true that Aristotle did not speak much about a fallacy that arises on account of synonymy, since it is not greatly effective. For if the respondent wishes to defend himself from a reputation based on the diversity of names alone, once it is conceded that these names are synonymous, then all the opponent needs to do is switch one name for the other, for then [that diversity] would no longer be a defect.[106]

Next, it is added that [a contradiction] involves [predication] not only of the same about the same but also with respect to the same, and related to the same, and in a similar manner, and at the same time;[107] and since there can be a defect in any of these conditions, this allows accordingly the positing of the other four modes. Now these modes are very close to the fallacy of *secundum quid et simpliciter,* except that, according to some people, in this fallacy there are two things that differ *secundum quid,* as for example, double in length, but not double in width, or father of Socrates, but not father of Plato. However, [they continue], in the fallacy *secundum quid et simpliciter* something is said *secundum quid* and something else *simpliciter.* But this seems to me to be a rather lame point [*debiliter dictum*], for it does not cohere with what has been said so far, nor with Aristotle's intention, since Aristotle expressly extends the fallacy of *secundum quid et simpliciter* to cases in which two things are said *secundum quid* when he says, in bk. 1 of the *Sophistical Refutations,* "or if both contraries, which are in any way together, are in [the same thing]," and gives the example about the shield that in one half is white, and in the other half black, and not white; therefore, it is white and black, or [it is white and] not-white.

We should say, therefore, that there is another distinguishing feature that

106. We arrive at this by reading *defectus,* with J. Rustenburg, for Hubien's *defensio.*

107. See p. 566.

coheres with what has been settled earlier and that turns on whether the defect is in the consequence or in the contradiction, as would be the case with equivocation or amphiboly. We can accordingly give examples of these four modes. First, where [the violation of] 'with respect to the same' is concerned, Aristotle brings up a paralogism that posits the case that a piece of iron or silver yesterday was three cubits long and today it has been extended by the blacksmith so that it has become four cubits long. Let that piece of iron or silver be called A; then the respondent claims that A is not bigger than it was yesterday, for it was neither rarefied, nor was any magnitude added to it, and the opponent would argue against him that since everything that is four cubits long is bigger than anything that is three cubits long, . . . etc. But it is obvious that there is no contradiction here, for he said that the piece was not bigger with respect to its total corporeity, whereas the opponent replied that it was bigger in length. Or thus: the respondent posits that he knows Coriscus well, and it is argued against him that Coriscus is educated, or is captured by rogues, these being things that he nevertheless does not know; it is clear, however, that there is no contradiction, for he knows Coriscus in some respects, and he does not know him in some others.

An example about [violating the requirement of] 'related to the same' is the following: let the respondent say to the opponent, "You do not have twice as many dollars as I have," supposing that the respondent has three dollars, and the opponent has only five; the opponent argues against him, saying: "Some dollars you have are two, and I have twice those; therefore, . . ." etc. It is clear that he does not contradict the intention of the respondent, for the respondent intended to speak about all of his own dollars taken together, whereas the opponent did not argue in relation to all but in relation to some of those dollars.

An example of [violating the requirement of] 'in a similar manner' [is the following]: let Socrates say to Plato, "Speak up, because I do not hear you," and then let me argue against him: "I am farther away than you are, and do not have a better hearing, but I still can hear his voice";[108] then it is obvious that I violate [the requirement of] 'in a similar manner', for the respondent intended to say that he did not hear him clearly and distinctly, and I do not argue that he hears him in this manner.

An example of [violating the requirement of] 'at the same time' [is the following]: let Socrates say to me while I am sitting, "You are sitting," and I immediately stand up and argue against him: "Nobody who is standing is sitting, but I am standing; therefore I am not sitting." It is obvious that there is

108. The point here is that I heard him utter something, even though I could make out what he said no more than you could.

no contradiction here, for he said I was sitting at one time and I am arguing that I am not sitting at another time.

It should be noted that it is not my intention, nor was it Aristotle's, to maintain that it is only with regard to these four circumstances that a refutation or contradiction can be impeded; on the contrary, it can occur with regard to any others that are not adhered to; and in this way the modes may be multiplied. Therefore, Aristotle did not list these modes as if they were all, but only as being the most usual ones.

7.4.4 The fallacy of petitio principii

(1) Next, in connection with the fallacy of *petitio principii* [begging the question], we first of all have to explain the terminology [*nomina*]. (2) In this context, we call *principium* the claim that the opponent propounds at the outset [*a principio*] to prove against the respondent, this being the opposite of what was put forward by the respondent; therefore, to beg the question is to take the same claim to prove itself, as in saying: 'Man is risible; therefore, man is risible'; but this would be ridiculous and would not really constitute any fallacy.

(3) Therefore, begging the question, insofar as it pertains to this fallacy, occurs when the opponent assumes for the proof of the conclusion a proposition that the respondent would have to deny just as much as or even more than the conclusion; and this occurs when the proposition in question is equally as doubtful as, or even more doubtful than, the conclusion, and it has such a connection with the conclusion that anyone denying the conclusion would have to deny it too. And thus, finally, what we call here 'begging' the question amounts to the same as assuming for the proof of the conclusion a premise that is just as doubtful as, or is more doubtful than, the conclusion.

(4) From this it is clear that begging the question violates not [the requirement of the validity of] the consequence but [the requirement of] proof, for a proof has to proceed from things that are better known.

(5) The fallacy of *petitio principii* is a deception arising from the concession of a premise that the respondent would have to deny to avoid refutation.

(6) The cause of illusion is some diversity between the premise and the conclusion that is such that the respondent, not seeing their connection, is not afraid to concede that premise, and the cause of defectiveness is

their connection, because of which the conclusion is evidently inferred from that premise against the respondent.

(7) This fallacy, therefore, comes about because the respondent concedes a premise that he should deny, not realizing that it implies the opposite of his position.

(8) According to Aristotle there are as many modes of this fallacy as there are ways in which one can happen to beg the question, and these ways, or some of them, Aristotle described in bk. 8 of the *Topics* and in bk. 2 of the *Posterior Analytics*.[109]

The fourth part, which discusses the fallacy of *petitio principii* [begging the question], has eight sections. The first shows what we call here *principium,* the second settles what is involved in begging the question, absolutely speaking, and the third clarifies what it is in this fallacy that we should call 'begging the question'.

Now we should note that Aristotle did not call this fallacy 'the fallacy of *petitio principii*' but *fallacia petitionis eius quod est in principio* [the fallacy of "begging" or assuming what was the question at issue at the beginning, or, in the principle]. For it is not absolutely the identical claim that is assumed for the purpose of proving itself (since this would be ridiculous and would not deceive the respondent), but rather something is assumed that is still partly the same as or is connected with [the original claim]. This, then, which is thus assumed or "begged," is not a *principium* [a principle] but is *in principio* [in the principle], for it is not totally the same and totally contained in it but rather a part in the whole, or something in something else, as is said in bk. 4 of the *Physics*.[110]

The fourth section infers a corollary that is obvious on the basis of the things that have been said just now as well as earlier, namely, that this fallacy in fact violates not [the requirement of the validity of] the consequence but rather [the requirement of the soundness of] the proof. Nevertheless, some other fallacy may occur at the same time that would impede [the validity of] the consequence, for, as Aristotle says in bk. 2 of the *Sophistical Refutations,*[111] "nothing prevents the same expression's containing several sources of deception."

The fifth section describes this fallacy, the sixth sorts out the cause of illusion and the cause of defectiveness, and the seventh shows how this fallacy comes about. And all these points are quite clear from what has been said.

109. Aristotle, *Topics* VIII.13.162b31–163a14; *Posterior Analytics* II.4.91a12-b10; cf. also *Prior Analytics* II.16.64b28–38.

110. See Aristotle, *Physic*s IV.4.211a29–34.

111. See 7.4.8 n. 143.

The last section, in sorting out the modes of this fallacy, refers us to bk. 8 of the *Topics* and to bk. 2 of the *Prior Analytics.* And we say that the first mode, which is common both to someone who demonstrates and to the dialectician, occurs if for the proof of the conclusion one assumes a premise that is lesser known or more doubtful, or equally known or equally doubtful. For however valid a syllogism or a consequence may be as to its form, it is no proof, for a proof should proceed from things that are better known. Thus, the experienced respondent will reply, "I am not obliged to concede your premise, for it is just as doubtful as, or even more doubtful than, the conclusion that you intend to prove against me, but everyone who denies this conclusion and posits my thesis denies that premise."

The second mode of begging the question is proper to someone who demonstrates, and it comes about when, for the demonstration of the conclusion, he assumes a demonstrable premise that is in fact not demonstrated, no matter how true and necessary and more believable than the conclusion it may be. For although it does not entirely fall short of being a proof [*probatio*], it does nonetheless fall short of being a demonstration [*demonstratio*], for a demonstration has to proceed from true and immediate premises or from what has been initially recognized by means of such premises, as will be explained in the treatise on demonstrations and was explained in bk. 1 of the *Posterior Analytics* and in bk. 1 of the *Topics.*[112] But the first immediate principles are indemonstrable; thus, he does not demonstrate who argues from [propositions] that are demonstrable but not demonstrated.

The third mode is more specific, in that it properly belongs to a demonstration *propter quid.* And this occurs when we argue *a posteriori,* from *per se* known and indemonstrable principles that, to whatever extent, are better known to us. For although such an argument would demonstrate *quia est,* nevertheless, it falls short of the demonstration *propter quid est.*[113]

Aristotle touches on these three modes very briefly in bk. 2 of the *Prior Analytics* when he says: "This happens in several ways, for if they do not syllogize at all, or if [they do so] from [premises] that are lesser known or equally[114] known, or if they go from what are posterior to what is prior . . .";[115] this you have to expound as follows: "or if from [premises] that are lesser known or equally known" indicates the first mode; "or if they do not syllogize at all," i.e., if a premise is not demonstrated, although it is demonstrable, indicates

112. Aristotle, *Posterior Analytics* I.2.71b20–23; *Topics* I.1.100a27–30.

113. See 8.7.11.

114. We arrive at this by reading *similiter* with J. Rustenburg for Hubien's *simpliciter* both here and below.

115. Aristotle, *Prior Analytics* II.16.64b30–33.

the second mode; and "or if from what are posterior to what is prior" relates to the third mode. And thus in the same place Aristotle adds that a demonstration has to proceed from the things that are prior and better known.

The fourth mode of begging the question occurs when the respondent does not respond to the opponent in accordance with the truth of the matter but chooses to defend the respondent in the manner of a sophistic or dialectical disputation, so that whenever the opponent assumes a premise such that to the respondent it is obvious that the conclusion against him should follow from it, the respondent should say: "Dear sir, I have to deny your premise, for it amounts to the same opinion to posit the conclusion you intend to prove and that premise, just as my thesis and the opposite of your premise amount to the same contrary opinion; therefore, you are begging the question, for you assume that which you are supposed to prove."

Under this fourth mode Aristotle also lists several modes at the end of bk. 8 of the *Topics*,[116] e.g., when someone assumes a universal proposition in order to prove a particular one, in the way in which we usually argue from the whole in quantity, or when he assumes several singular propositions to prove a universal one; or again, when someone, for the proof of one of two convertible propositions, or of ones that mutually imply each other, assumes the other, etc. And the same goes for all the other necessary consequences, whether they hold by virtue of dialectical loci or otherwise. For a respondent sophist never has to concede something from which it appears that the meta against him follows, but he should regard all such [propositions] as ones that beg the question.

7.4.5 The fallacy of the consequent

(1) If we want to discuss the fallacy of the consequent, we have to set forth what we should understand by 'consequent', 'antecedent', and 'consequence', and we should sort out the rest afterwards. (2) So, in the logicians' usage, the consequent and the antecedent are propositions one of which is signified to follow from the other, with that signification being effected by the conjunction 'if', 'therefore', or something of the sort; and thus the consequent is the proposition that is signified as following from the other, and the antecedent is the proposition whence the other is signified as following. (3) A consequence is an expression that is composed

116. Aristotle, *Topics* VIII.13.162b31–163a14.

of an antecedent, a consequent, {and a connective [*coniunctio*]}[117] designating that the latter follows from the former. The antecedent is that to which the conjunction 'if' is added in a conditional proposition, whereas the other proposition is the consequent, but in an argument the consequent is that to which the conjunction 'therefore' is added, and the other proposition is the antecedent. (4) Consequences are classified into those that are true and those that are false. A true consequence is one the consequent of which is never false, or is mostly not false, when its antecedent is true. (5) Now some of these consequences are necessary, namely, those whose consequent is never false when the antecedent is true, and these are the only ones used by people who construct demonstrations; any others are merely probable, namely, those whose consequent is not false in most cases when the antecedent is true, and these are the ones used by dialecticians. (6) A consequence is said to be false in two ways: in one way, for the demonstrator, namely, if it is not necessary; in the other way, absolutely, namely, both for the demonstrator and for the dialectician, i.e., if it is neither necessary nor probable. (7) And we should note that every true consequence is converted into another true consequence when two conditions are fulfilled, namely, that the antecedent and the consequent are transposed and that their quality is changed to the contradictory [quality], and if either of these two conditions is not observed, then the conversion is not formally valid.[118]

(8) The fallacy of the consequent is a deception arising from believing that a consequence is converted in this way when it is not [so] converted. (9) The cause of illusion is that every true consequence is convertible into another true one, and the cause of defectiveness is that the consequence is not validly converted in the way in which it is believed to be validly converted; or the cause of illusion is the partial identity of the valid conversion with the invalid one, and the cause of defectiveness is their diversity. (10) The fallacy of the consequent occurs, therefore, when it is believed that a consequence is validly converted into another one, when in fact this consequence is not validly converted, and furthermore when one believes, on account of the truth of the first consequence, that the second is true as well, whereas in fact it is not. (11) There are two principal modes of this fallacy. The first occurs when one transposes the antecedent and the consequent without changing their quality, and this is called 'from the affirmation of the consequent'. The second mode occurs by con-

117. The text is given here as amended by J. Rustenburg.

118. Buridan here formulates what is known as the rule of contraposition; in modern notation: $p \rightarrow q \leftrightarrow \sim q \rightarrow \sim p$.

verting the consequence into one involving the opposite quality of the antecedent and the consequent without their transposition, and this is called 'from the destruction of the antecedent'.

The fifth part deals with the fallacy of the consequent, and it has eleven sections. The first sets forth what is intended and the order of proceeding, and that is clear. The following six sections deal with the names 'antecedent', 'consequent', and 'consequence', and the other four directly discuss this fallacy.

The second section, therefore, describes the antecedent and the consequent without distinguishing them and then describes the conjunctions that in a consequence signify that the one [of its two clauses] is the antecedent and the other is the consequent; and then it goes on to distinguish between the antecedent and the consequent. And the whole text is obvious.

The third section describes consequence, and from this description it is obvious that a consequence is a sort of hypothetical proposition. Next, it notes that there are two kinds of consequence, the first of which is a conditional proposition that asserts neither the antecedent nor the consequent (e.g., 'if a donkey flies, then it has wings') but asserts only that the latter follows from the former. Such a consequence, therefore, is not an argument, for it does not conclude to anything. The other kind of consequence is an argument, given that the antecedent is known, or is known better than the consequent, and this asserts the antecedent, and from this it assertively infers the consequent. In a conditional we use the conjunction 'if', whereas in an argument we use the conjunction 'therefore'. Further, this section teaches us that in a conditional the conjunction is attached to the antecedent, whether the antecedent is placed before or after the consequent, as in 'If a donkey flies, then a donkey has wings' and in 'A donkey has wings, if a donkey flies', but in an argument the conjunction is attached to the consequent, as in 'Man is risible; therefore an animal is risible'.

You should further note that in an argument a conditional can be antecedent to another one, as when we correctly convert a whole consequence, for example: 'If a donkey flies, then a donkey has wings; therefore, if no donkey has wings, then no donkey flies'.

The fourth section classifies consequences into true and false ones, and the whole text is obvious. Still, some people say that an invalid consequence is not a consequence, just as we would not call a counterfeit dollar a dollar. Others, however, say that some consequences are true and others are false, as also are propositions, but this is nothing extraordinary, since every expression that has the form of a consequence is a proposition.

The fifth section classifies true consequences. And this subdivision is clear, given the description of true consequence that immediately follows.

The sixth section subdivides false consequences, and this is also quite clear. One might add, however, that the following inference is not valid: "It is false for the demonstrator; therefore, it is false," for this would be an instance of the fallacy *secundum quid et simpliciter.* For the demonstrator does not deny a nonnecessary consequence because it is absolutely false, but rather because it should never be assumed assertively in a demonstration (at least not in one properly so called, namely in a doctrinal and enduring demonstration),[119] indeed, no more than a false one should be. Even sophists immediately deny consequences if they are not true, for they strive to appear as wise as the demonstrators. And it is according to these same demonstrators, and in accordance with what was just said, that in chapter seven of the first treatise it was asserted that every true conditional is necessary, whence also every false one is impossible, for it can be neither necessary nor true for the demonstrators.

The seventh section puts forth a notable point concerning the conversions of consequences, which holds by virtue of the following *a priori* rule [*per istam regulam prioristicam*]: 'It is necessary that if the consequent follows from the antecedent by a true consequence, then the contradictory of the antecedent follows from the contradictory of the consequent also by a true consequence'.

The eighth section describes the fallacy of the consequent. Now the description is clear once we see that although every true consequence can be converted into another one, nevertheless, it is not converted in any way you like, but rather it is necessary to observe the aforementioned two conditions.

The ninth section supplies two causes of illusion and two causes of defectiveness. One possible cause of illusion is the fact that it is known that every true consequence can be converted into another true one, wherefore, since the first consequence is true, it is believed that the one into which it has been converted is also true; this, however, is not always the case, e.g., when it has not been converted in the appropriate manner. Hence also the cause of defectiveness is that the conditions required for a valid conversion have not been observed. Therefore, we should consider that, since the conversion should take place by changing the qualities [of the antecedent and consequent] into their contradictories, one may err on account of this fallacy precisely in the ways in which the contradictories of the antecedent and the consequent may be construed defectively. It is also said that a possible cause of illusion is the partial identity of the valid conversion with the invalid one. For, given that an inexperienced person does not see their difference, which is the cause of defectiveness, it is because this difference is small or hidden that he believes both to be valid.

119. See 8.7.1.

The tenth section shows what it is that causes this fallacy to deceive us. And this is obvious to anyone who takes into account what has been said.

The last section distinguishes two modes of this fallacy. The first proceeds from the affirmation of the consequent to the affirmation of the antecedent, so that just as the consequent truly follows from the antecedent, so the antecedent is taken to follow truly from the consequent; the second mode proceeds from the destruction of the antecedent to the destruction of the consequent, so that just as the consequent follows from the antecedent, so the opposite of the consequent is believed to follow from the opposite of the antecedent. But neither of these is necessary; it *is* necessary that just as the consequent follows from the antecedent, so also the contradictory of the antecedent follows from the contradictory of the consequent.

An example, drawn from among necessary [consequences], is [provided by observing] how Melissus argued sophistically in both of these ways that the universe is of infinite magnitude. First, and in the first mode, he posited that if the universe is created, then it is finite, and by conversion he concluded that "therefore, if it is finite, then it is created; but it is not created (as he claimed); therefore, it is not finite, but infinite." Second, and in the second mode, he posited, as in the previous case, that if the universe is created, then it is finite, and he concluded that if it is not created, then it is not finite; but, since it is not created, as he claimed, it followed that it is not finite but infinite. Similarly, in the case of probable and rhetorical consequences, since it is probable that every adulterer is well-groomed and lascivious, the consequence 'If he is an adulterer, then he is well-groomed' is probable, and it is converted sophistically [when it is inferred] that if he is well-groomed, then he is an adulterer; this does not follow, since the antecedent,[120] 'well-groomed' applies to plenty of others.

We should further note, as Aristotle says,[121] that the fallacy of the consequent is a part of the fallacy of accident and that it is accidental to the consequent. We do not, nevertheless, claim that the fallacy of the consequent is formally the fallacy of accident, nor that a paralogism of the consequent is a paralogism of accident, but rather that from the matter of an argument that is defective with respect to the fallacy of the consequent one may form a paralogism of accident. This is done by changing the consequence into a categorical proposition and arguing from two affirmatives in the second figure, for example, 'Every adulterer is well-groomed; Socrates is well-groomed; therefore, Socrates is an adulterer'; alternatively, this can also appear in the first figure,

120. According to J. Rustenburg's reading, this could be rendered as "the accident."

121. Aristotle, *On Sophistical Refutations* 6.168b28–29.

using a negative minor, as in 'Everything created is finite; the universe is not created; therefore, the universe is not finite'.

There is, however, a formal difference between this fallacy and that one, for the argument in this fallacy is put together from two consequences connected by an apparent conversion; but in the fallacy of accident [the argument] is arranged in the way or fashion of a single syllogistic consequence. Nevertheless, it is not always necessary to express both consequences in the fallacy of the consequent, but it often happens that having the first one in mind, the second is expressed as one that apparently follows from the first.

We should also note that in the fallacy of the consequent, some people add a third mode, which they call 'the insufficient antecedent' if the antecedent does not suffice for inferring the consequent, as when one proceeds from an insufficient number of singulars to a universal, from one of the exponents to the [proposition] expounded,[122] from a nondistributed superior to the inferior, or from many causes of truth to one, and so forth in many other cases. But is seems to me that we should not maintain this. For then we would have to say that every fallacy of accident, or even [every fallacy] *secundum quid et simpliciter,* is a fallacy of the consequent. It is necessary, therefore, as has been said, that if there is to be a fallacy of the consequent that is distinct from the other twelve, then it should consist of two consequences, as has been said; and if a sophistic argument from an insufficient antecedent arises otherwise [namely, not involving two consequences], then it should be reduced to that [other] fallacy, as was also noted above. But we shall say more about this later, namely, in the last part of this chapter.

Some people also raise the question as to whether we have a fallacy of the antecedent as well as one of the consequent. My reply is that, since names signify by convention [*ad placitum*], we might call this the fallacy of the antecedent, especially in its second mode, which proceeds from the destruction of the antecedent to the destruction of the consequent. Since, however, it is proper to this fallacy to consist of two consequences, as has been said, it seems to be reasonable that it should take its name whence the consequence also does; but this is from the consequent, as is obvious; therefore, . . . etc.

122. That is, from one of the propositions figuring in the analysis of one of the so-called *exponibilia* to the *exponibile* itself. An *exponibile* is a proposition that needs to be analyzed in terms of several logically simpler propositions. For example, the proposition 'Every man except Socrates is running' is to be analyzed as 'Socrates is not running and every man other than Socrates is running'. Types of *exponibilia* included exceptive, exclusive, and reduplicative propositions, as well as propositions containing the verbs *incipit* (begins to), desinit (ceases to), etc.

7.4.6 The fallacy of non-cause as cause

(1) Next, as to the fallacy of non-cause as cause, we should know that, as Aristotle says, it occurs in syllogisms *ad impossibile.*[123] A syllogism *ad impossibile,* as was said in the last chapter of the treatise on syllogisms,[124] consists of a syllogism concluding to an impossible conclusion and the reversion to the premises so as to infer their impossibility, or the impossibility of one of them, from the impossibility of the conclusion inferred. (2) This fallacy, therefore, arises on account of a defect in a syllogism *ad impossibile,* not from the defect in the first syllogism with respect to [the validity of] the inference, for then it would be the fallacy of accident; nor does it arise on account of the defect of the requirement that the premises be better known so as to prove the ultimately intended conclusion, for then it would be [the fallacy of] begging the question, and not this fallacy; nor does it arise from the defect of the contradiction between the ultimately concluded and proved conclusion and the thesis of the respondent, for then it would be the fallacy of *ignorantia elenchi;* but rather it arises from the defectiveness of the reversion from the impossibility of the conclusion of the first syllogism so as to infer the impossibility of that [thesis] on account of which the impossible conclusion followed.

(3) Next, we should also note that in a valid syllogism, although the premises are not causes of the conclusion as far as its being or its being true or necessary is concerned, as will be pointed out in the treatise on demonstrations,[125] nevertheless, they are said to be the causes of the conclusion insofar as they entail them by a necessary inference. Therefore, every premise that supports the necessary entailment of the conclusion in a syllogism, and which is such that if it were removed, there would not be any entailment, is called here a cause, and if to the premises thus operating some other premise is added that performs nothing toward this effect, then it is called a non-cause, and if it only appears to work to this effect, on account of some agreement with the conclusion or with some of the premises thus operating, then it is called a non-cause as cause. And I say 'non-cause' because it does nothing, but 'as cause' because it is assumed in a syllogism among other premises as if it were contributing to the conclusion and were [in this sense] a cause.

(4) Thus, the fallacy of non-cause as cause is a deception arising from the fact that a non-cause is believed to be a cause, for which reason, from the impossibility of the conclusion, one returns to conclude the impossi-

123. Aristotle, *On Sophistical Refutations* 5.167b23–24.

124. See 5.10.6.

125. See 8.8.1.

bility of that non-cause as if it were a cause. (5) The cause of illusion is the agreement of the premise that is a non-cause with the premises that are causes or with the conclusion, on account of which it seems to be a cause in entailing the conclusion, just as the other premises are. The cause of defectiveness is that the premise that is a non-cause is inferred to be impossible on account of the impossibility of the conclusion, whereas it is not [impossible in this way].

(6) This fallacy, therefore, occurs in returning from the impossibility of the conclusion to conclude that some premise is false or impossible, and since the premises that are causes are believed to be true or possible, it is concluded that some premise that is a non-cause is false or impossible, whereas this is not the case. (7) As to the mode in which this fallacy occurs, Aristotle puts forth the following paralogism: "the soul and life are the same; life and death are contraries, and generation and corruption are also contraries; but every death, at least that of a brute animal, is corruption; therefore, every life of such an animal is generation; but this conclusion is false; therefore, [at least] one of the premises is false; but all of them are true, except for the first one, as can obviously be proved; therefore, the first was false, namely, 'the soul and life are the same', which was put forth by the respondent." [126] And it is clear that that premise was a non-cause, for if we remove it the conclusion still follows by the following topical rule: 'If one of two opposites applies to one of two other opposites, then the opposite of the first applies to the opposite of the second'.[127]

The sixth part is about the fallacy of non-cause as cause, and it has seven sections. The first posits that this fallacy occurs only in syllogisms *ad impossibile* and spells out the components of a syllogism *ad impossibile,* so that we can sort out exactly which is the one whose defect brings about this fallacy.

And in accordance with this plan the second section shows what is the factor in a syllogism *ad impossibile* whose defectiveness accounts for this fallacy and what are those factors whose defectiveness does not; from this it is also obvious that this fallacy does not occur in ostensive syllogisms.

The third section shows what we call here 'cause' and what 'non-cause', as well as what 'non-cause as cause', and why and in what sense we call them so.

126. Aristotle, *On Sophistical Refutations* 5.167b28–32.

127. That is, if P and $\tilde{P}$ are opposites, and so are Q and $\tilde{Q}$, then if P applies to Q, then $\tilde{P}$ applies to $\tilde{Q}$. In the argument, 'let P be life, whence $\tilde{P}$ is death, and let Q be generation, whence $\tilde{Q}$ is corruption. Then, since whatever is death is corruption, therefore whatever is life is generation; i.e., every death of a brute animal is a corruption, whence every life of a brute animal is a generation.' For the topical rule in question see 6.5.2 and 6.5.5.

The fourth section describes this fallacy. The fifth section sorts out in it the cause of illusion and the cause of defectiveness. The sixth section shows how this fallacy affects us, and the seventh presents an example of a paralogism that arises out of the addition of an irrelevant premise to premises already disposed [so as to yield a conclusion] necessarily. And all these points are clearly made in the text.

But it would seem that we should extend this fallacy without qualification to another mode, and a quite notable one at that, because although it is necessary that in every syllogism that concludes to a false conclusion one of the premises be false, nevertheless, it is not necessary that in every syllogism that concludes to an impossible conclusion one of the premises be impossible; this is because it may happen on account of the incompossibility of the premises, even though some or all of them are possible, that an impossible conclusion follows of necessity.

For example, the following proposition is possible: 'Everything running is a donkey', and the following is also possible: 'Every man is running', but the conclusion 'Every man is a donkey' does follow, and it is necessarily impossible; if, therefore, returning, we were to say: 'the conclusion is impossible; therefore so is one of the premises' we would be wrong, for neither of them is impossible. And this defectiveness is in agreement with the second mode of this fallacy, for we should say: 'the conclusion is impossible; therefore, some one of the premises is impossible, or the premises from which it followed are incompossible'.

Thus we [still] have to concede that the following is a valid inference: 'the conclusion is impossible', or 'the consequent is impossible'; 'therefore, the antecedent from which it follows is impossible'. For in a syllogism, the total antecedent is not either of the premises but the conjunctive proposition composed of both premises, and this can be impossible either because of the impossibility of one of the premises or because of the incompossibility of its categorical [members], even if both are possible, as in 'everything running is a donkey, and every man is running; therefore, every man is a donkey'. In the same vein, I form a paralogism to prove that it is impossible for you to drink as follows: 'Someone who drinks is able not to drink, but you drink; therefore, someone who drinks does not drink';[128] the conclusion is impossible; therefore, either of the premises [is impossible], but not the major, which says: 'Someone who drinks is able not to drink'; therefore it is the minor, which says that you drink; therefore it is impossible for you to drink.

128. I do not see why Buridan thinks this conclusion follows, or why he thinks anyone would think so. Perhaps the text is corrupt here, although it is consistent with the rest of this paragraph.

In the same way, great teachers were fooled by this mode of this fallacy. This is how Aristotle, in bk. 9 of the *Metaphysics,*[129] wanted to conclude that everything capable of being corrupted will be corrupted and that everything capable of being generated will be generated. He argued about corruption in the following manner: 'Let A, according to the adversary, be capable of being corrupted, but such that it will not be corrupted; then we can argue thus: A will be corrupted, and it will not be corrupted; therefore, something that will not be corrupted will be corrupted; the conclusion is impossible; [and so,] therefore, [is] either of the premises; not the major, for it is conceded that A is capable of being corrupted; therefore the minor is impossible, namely, that A will not be corrupted, and if it is impossible that A will not be corrupted, then it is necessary that A will be corrupted; therefore, everything that is capable of being corrupted will be corrupted'. And one might argue in the same way that everything capable of being generated will be generated.

Again, prima facie it seems that Aristotle, in bk. 1 of *On the Heavens,*[130] used such an argument with the same intention. For he intended that the following [proposition] should be impossible: 'something that always exists in the future is corruptible or is capable of not being', for that from which something impossible follows is impossible; but this thesis entails something impossible, namely, that the thing in question sometime will and will not exist at the same time, by the following argument: Let that being be A. Then, A will always exist, as you say, and sometime will also not exist (let us assume); therefore, that which will always exist sometime will not exist, and this is impossible; but if you say that the impossible followed from that falsity which I assume, namely, that A sometime will not exist, Aristotle will reply that this cavil is invalid, for even if it is false, it is nevertheless possible, for you assume that A is capable of not being; but from something possible, however false it may be, there never follows something impossible, although something merely false may well follow from it; therefore, it is not because of the falsity of that premise that the impossibility follows, but rather because of the impossibility of the thesis of the adversary.

But we, for our part, will reply that those conclusions of Aristotle do not follow on account of the impossibility of some premise, nor on account of the impossibility of the thesis of the adversary, but rather on account of the incompossibility of the premises. Thus, the following is an invalid inference: 'the conclusion is impossible; therefore, so is some one of the premises', but it is correctly inferred that the total antecedent is impossible. If, however, one of the premises were necessary, it would correctly be inferred that the other is

129. See Aristotle, *Metaphysics* IX.4.1047b3–9.

130. See Aristotle, *On the Heavens* II.2.283a25–28.

impossible, for no necessary proposition is incompossible with some possible proposition.

We should therefore stress that in order to extend this fallacy to this mode we should somewhat correct what has been said about non-cause as cause. We will thus say that since an impossible conclusion cannot be inferred of necessity, except from an impossible antecedent, therefore, in the case at issue the cause of an impossible conclusion's being inferred by a necessary consequence is the impossibility of the antecedent. If, under these circumstances, a premise is irrelevant, namely, if it is one that has nothing to do with the necessary entailment of the conclusion, then that is in no way a cause in this fallacy, for the conclusion could also be inferred without it. If, however, none [of the premises] is irrelevant, then the antecedent is impossible. This is so on account of the impossibility of one of the premises, given that the other is necessary, and then it is the impossibility of [this premise] that is called the cause of an impossible conclusion's being entailed, and in this case the necessary premise is called a non-cause. [Alternatively,] if each premise is possible, then it is not the impossibility of either of them that is the cause of an impossible conclusion's following, whence either of them separately is called a non-cause, but it is the total antecedent made up of them so as to form a conjunctive proposition that is the cause in this case, and it is from the impossibility of this conjunction, which results from the incompossibility of the premises, that the impossibility of the conclusion follows.

Thus, the fallacy of non-cause as cause is a deception arising from the fact that a premise is believed to be the cause of a false or impossible conclusion's following when in fact it is not the cause. And the cause of illusion is that no other premise seems to be false or impossible, whence it is believed that it is from the falsity or impossibility of that premise that that of the antecedent as a whole derives. And the cause of defectiveness is that the falsity or impossibility of the antecedent originates from elsewhere.

Finally, I return to the first mode. For someone may ask whence, in the example presented, the falsity or the impossibility of the antecedent originates, this being the cause of a false or impossible conclusion's following. My reply is that the following proposition is false and impossible: 'Death and life are contraries'. For the name 'life' does not signify its significate in the manner of change, nor in the manner of rest, but rather life can be found both in change and in rest; 'death', however, does signify its significate in the manner of change, and a name of change is not contrary to a name of non-change, or rest, as is said in bk. 5 of the *Physics*.[131] I also further assume that, taking

131. See Aristotle, *Physics* V.6.229b22–231a5.

these names in personal supposition, it is not true that death or corruption is contrary to life or to that which is corrupted.

7.4.7 The fallacy of many questions as one

(1) Finally, we shall treat of the fallacy of many questions as one. In connection with this we first have to note that a teacher, who has the position of the opponent in a demonstrative disputation, does not ask questions, properly speaking, but rather assertively propounds or enunciates the conclusion to be proved. In a dialectical or sophistic disputation, however, the opponent does ask questions, giving the respondent the choice to incline toward whichever side he wants, for he can argue toward either side of a contradiction, and this the demonstrator cannot do. (2) A question is a query put forth by the opponent to the respondent in an interrogative manner, for example: 'Is there a vacuum?' or 'Can a white thing be black?'

(3) A proposition and a question both differ from and agree with each other. They differ because a proposition is enunciated assertively, but not so with a question; they agree because the same expression that is a proposition without an interrogative sign [*signum interrogativum*] becomes a question when the sign 'Whether', 'Is it the case that', or something like these is added to it; thus 'God exists' is a proposition, whereas 'Is it the case that God exists?' is a question. And for this reason, a question is said to be one or many in the same manner as is a proposition. (4) But a proposition is said to be one in two ways, broadly and strictly. A proposition is said to be one in the broad sense regardless of whether one [predicate] is predicated [in it] of one [subject], or many of many, or many of one, or one of many, as long as [they are predicated] in conjunction [with one another]; but in the contrasting manner a proposition is said to be many if many are predicated [in it] of one, or one of many, or many of many, but not in conjunction, as was established in [the commentary on Aristotle's] *On Interpretation*.[132] And in this way every proposition is one, just as every man is one man, whence no multiple proposition [*propositio plures*][133] is a proposition, but rather is many propositions.

132. J. Buridan, *Quaestiones longe super librum Perihermeneias,* ed. R. van der Lecq (Nijmegen: Ingenium, 1983), bk. 2, q. 4.

133. As Buridan explains in the passage referred to in the previous note, the term *proposi-*

(5) A proposition is said to be strictly one that has one incomplex predicate of singular number predicated of one incomplex subject of singular number, as in, for example 'Man is an animal'. And, as opposed to this, every proposition would be said to be multiple [*plures*] that has a subject or a predicate of plural number or many subjects or predicates, although in conjunction.

(6) Thus, in accordance with the fact that what is opposed to a proposition that is strictly one is a proposition that is multiple broadly speaking, there are several grades of propositional multiplicity. The first grade comes next to a proposition that is strictly one, in the case of a proposition that has one incomplex predicate predicated of one incomplex subject but in the plural number, as in 'The whole is the parts', 'Units are a number', and 'Men are animals'. The second grade occurs when the subject or the predicate is a complex term but one that involves the relation of determination and determinable, as in 'Man is a rational mortal animal', 'Socrates' horse runs', and 'A white man is Plato's father'. The third grade is exemplified when the subject or predicate involves several hypothetically conjoined terms, as in 'Socrates and Plato are running', 'A composite [substance] is made up of matter and form', and 'Socrates runs or disputes'. The fourth grade involves the hypothetical proposition. And it is obvious that any of these grades could have several subdivisions and combinations and that even these grades would not go beyond the limits of propositional unity.

(7) There are, however, other grades that do go beyond the limits of propositional unity, even in the broad sense. The first occurs when unity of utterance but not of intention is preserved, and this sort of plurality or multiplicity pertains to fallacies of words. Other grades vary in accordance with the multiplicity of intentions corresponding to the multiplicity of utterances, excluding any consideration of utterances. But then the second grade occurs when, in the manner of a categorical proposition, namely, by means of one copula, many [items] are predicated of one [item] or of many [items], or one [item] of many [items], but not in

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tio plures (lit., the ungrammatical 'many proposition') is not to be construed as standing for something that is both a proposition and is many, in the same way as the term *homo pictus in pariete* (man painted on the wall) is not to be construed as standing for something that is both a man and is painted on the wall (for of course nothing painted on a wall *is* a living human being, even though it is painted *to represent* a human being), but rather it should be interpreted as standing for something that represents a man, although it is not a man, and is painted on the wall. In a similar fashion, the phrase *propositio plures* is to be construed as standing for some locution that resembles a proposition, although it is not a proposition, and is many; indeed, it is many propositions.

conjunction, as in 'A man, a horse, a stone, a donkey is white, warm'. The third grade occurs if many [items] are predicated of one or of many, or one of many that are not in conjunction as happens in hypothetical propositions, as in 'Socrates runs, Plato runs', in 'Socrates runs, Socrates disputes', or in 'Socrates runs, Plato disputes'. These are then the seven grades of multiple propositions.

(8) Further, it is clear that it is in the same number of ways that a question can be said to be multiple, for to every expression that is put forth in the manner of a proposition one may add an interrogative sign. (9) Since, therefore, every proposition that is said to be one, whether broadly or strictly, is either true, so that it is not false, or is false, so that it is not true, and it does not have to be distinguished given its proper meaning [*de virtute sermonis*], it is appropriate to give someone who is raising a question about it one determinate response, either by conceding it as true or by denying it as false, or at least by putting it in doubt. But to a question that is multiple in the last three modes, one should not give one response but many responses, for it is not a single question itself but rather many questions.

(10) Now the respondent is said to take many questions as one if to a multiple question he responds with one response, in the way in which one should respond to a single question. (11) The fallacy of many questions as one, therefore, or its converse, is a deception arising from the fact that it is not known which question is one or which many, nor, consequently, to which one should give one response or many responses. (12) The cause of illusion in this fallacy is a certain agreement between a multiple question and a question that is one, and the cause of defectiveness is their diversity. (13) The modes of this fallacy are very numerous, in that there are as many as there are ways in which one may take a question that is many as one, or one that is one as many, in the course of arguing or responding.

The text dealing with this fallacy is quite long, for its subject matter has barely been investigated by philosophers, and so the points to be assumed in the discussion of this fallacy are quite clearly stated in the text, almost without any need of an explanation. And this seventh part can be broken down into thirteen subparts, or sections.

The first section shows why Aristotle calls this the 'fallacy of many questions as one' and not the 'fallacy of many propositions as one'. For both can be said appropriately, but Aristotle speaks about 'questions' to indicate that this field of inquiry embraces the art of dialectic or sophistry, wherein it is characteristic of the opponent to ask questions.

The second section describes the question, and the third presents the agreement and difference between a proposition and a question, and from this it is inferred that questions can be classified into those that are one and those that are many, just as are propositions. And these points are obvious.

The fourth section provides a division of propositions that are one and declares what we are to understand by a 'proposition said to be one, broadly speaking', and what by 'proposition that is many', in the sense in which we contrast a 'proposition that is many' with a 'proposition that is one, broadly speaking'. It shows that a proposition that is said to be many in this way is not a proposition, according to what is said in bk. 1 of the *Sophistical Refutations,* namely, that the definition of one thing and the definition of a thing, absolutely, are the same, as are the definition of 'man' and the definition of 'one man', and likewise in other cases.[134]

The fifth section shows what we understand by a 'proposition that is strictly one' and by a 'proposition that is many', as opposed to a proposition that is strictly one.

The sixth and seventh sections distinguish seven modes of propositions that are many, by contrasting a 'proposition that is many' with a 'proposition that is one, strictly speaking'. Thus, the first four modes, presented in the sixth section, are not contrasted with a proposition that is one broadly speaking, but the other three modes are contrasted both with a proposition that is one broadly speaking and with a proposition that is one strictly speaking. And it would appear that all the points in these sections are clear enough.

The eighth section concludes that a question can be said to be many in just as many ways as this was attributed to a proposition; and this is clear from the third section. The ninth section shows which modes of a question that is many require one reply and which ones do not. The tenth section shows what we call 'taking a question that is many as one'. And all these points are clear enough.

The eleventh section describes this fallacy, and the twelfth assigns its cause of illusion and its cause of defectiveness. And the whole text is clear from what has been said.

The last section shows how the modes of this fallacy can be sorted out. Thus, the first mode occurs when a proposition that is strictly one is taken as many. For example, let there be the following question: 'Is man an animal?' To this let the respondent reply 'Yes'; and then the opponent will argue against him as follows: "since for every animal that is not a man [the term] 'animal' can truly be denied of [the subject] 'man' and for every animal that is a man it can truly be affirmed of [the subject] 'man' (and this is the major premise), but

134. Aristotle, *On Sophistical Refutations* 6.169a9–11.

there are many more animals that are not men than there are that are men, therefore you should deny to the same extent, or even more so, as you affirm or concede the proposition 'Man is an animal', or at least you should respond by distinguishing between those for which it is granted and those for which it is denied."

But the respondent only says that he does not have to distinguish, for the question is one, nor does he have to respond by several replies, but the proposition involved in the question, namely, that man is an animal, is to be granted absolutely. And then in response to the opponent's major, namely, that for every animal that is not a man 'animal' can truly be denied of 'man', and for everything that is a man it can be truly affirmed [of 'man'], it will be said that this is to be conceded in reply to several questions, but not in reply to one, as is the case here. For in the example that involves the question 'Is man an animal?' one should not deny 'animal' of 'man', but it has to be granted absolutely. But in response to 'Is man a brute animal?' [the term] 'animal' has to be denied of 'man', and [the proposition] 'Man is a brute animal' would be truly denied for more animals than [the proposition] 'Man is an animal' would be truly affirmed.[135]

The second mode covers the case of a proposition that is said to be many because its subject or its predicate or both are plural in [grammatical] number; in this event we believe that predications and definitions in the plural number are as absolutely or analogously true as are those in the singular number; thus it appears to us that if these men are blind, then so is each one of them and conversely, and if they are white, then so is each one of them white and conversely. If on such grounds we believe that this is so in every case, then we are deceived in many cases.

135. Apparently, Buridan regards these indefinite sentences as what in modern logic we would call open sentences. The subject term may be taken to refer to various individuals, i.e., it may be assigned several referents as its semantic value. For example, the subject term of 'Man is an animal' in one such 'value assignment' can be interpreted so that the subject term is taken to refer to Socrates and in another so that the subject term is taken to refer to Plato. Of course, if we want to interpret the subject term for something that is not a man, then the subject term in that assignment could not properly be taken to refer to that thing, so in that assignment the subject would refer to nothing, whence the affirmative categorical in that assignment is false. But then, 'Man is a brute animal' is false for all assignments, whence its denial is true for all assignments. On the other hand, 'Man is an animal' is true for only assignments in which 'man' is taken to stand for a man, whereas it would be false for all assignments in which it would be taken to stand for a non-man, to which it cannot properly refer. For a formal account of the theory of personal supposition along these lines see G. Klima, *Ars Artium* (Budapest: Institute of Philosophy of the Hungarian Academy, 1988), essay II.

This happens, in the first place, when a term is collective or is taken collectively, as when someone asks about all the persons of a city or of two cities whether they are [a] people, and one responds that they are; if it were then inferred that therefore each one of them is [a] people, this would be an error in the second mode of this fallacy. The same error occurs in the following: 'All the apostles are twelve; therefore, Peter is twelve', or even 'therefore, Peter and Paul are twelve'; similarly, [the error occurs] in this case: 'These horses cost ten pounds; therefore, each one of them costs ten pounds', or here: 'All the parts [taken together] are their whole; therefore, any part is its whole', or 'The intelligences [*intelligentiae,* the angels] are many; therefore, an intelligence is many'.

We are similarly deceived by this mode with noncollective terms and terms not taken collectively if we believe that everything is predicated in an analogous manner both in the plural and in the singular numbers in negative predications. For example, if, pointing at two persons, one of them good and the other bad, or one sighted and the other blind, we ask whether they are good, or whether they are blind, and the response is given that they are not good, or that they are not blind, then we cannot infer 'therefore, neither of them is good', or, 'therefore, neither of them is blind'; on the contrary, of neither of them taken alone can we conclude that he is not good or that he is not blind.

And it is in this mode that the following sophism proceeds. Assuming that here we have ten men of whom one is blind and the other nine sighted, are there, then, more who are not sighted than are sighted or conversely? And I reply that there are more who are not sighted, for there are ten who are not sighted, and there are only nine who are sighted. But you argue against this as follows: 'there is one who is not sighted, and there are nine who are sighted, and nine are more than one; therefore, . . . etc.' I reply that your major premise and even the minor are true, whence this correctly follows: 'therefore, there are more who are sighted than the one who is not sighted', but this does not follow: 'therefore, there are more who are sighted than the ones [or: those] who are not sighted'. And if we were to posit the case of there being two blind persons and the other eight sighted, then of the two only would it be true to say that each one of them is not sighted, and of the eight it would be true to say that each one of them is sighted; therefore, there are no more who are sighted than who are not sighted.[136] And I say that this is indeed not the case, but still there are more of those each one of whom is sighted than of those each one of whom is not sighted.

136. In this case 'Ten are sighted' is false, whence its contradictory, 'Ten are not sighted' is true; and only 'Eight are sighted' is true; therefore, 'No more are sighted than are not sighted' is true, since eight are no more than ten.

But you will still insistently ask whether in the above-described case more are non-sighted than sighted. And I reply that no, on the contrary, more are sighted,[137] for only two are non-sighted, even though there are ten that are not sighted. For there is a difference between saying 'those that are not sighted' and saying 'those that are non-sighted', since the latter is affirmative, whereas the former is negative.[138]

And we should stress, as Aristotle indicates,[139] that it is not always necessary to give the description of a term in the singular and of the same in the plural number in an analogous manner. For example, if everything that is naturally able to have sight and does not have it is blind, it does not follow that any things that are naturally able to have sight and do not have it are blind; rather, such an inference is [an instance of] this fallacy. For then it would follow that Socrates and Plato would be blind if one of them had sight and the other did not. But it also appears to me that it correctly follows that if every thing that is naturally able to have sight and is a non-haver of sight is blind, then also all things that are naturally able to have sight and are non-havers of sight are blind.[140]

But some people say that in the previous case, namely, when one is blind and the other is sighted, if the question is formulated thus: 'Are these [people] blind?', since the question is many, one should not give one response, saying yes or no, but one should give many replies, saying that one of them is blind and the other is sighted. But I do not think this is correct; for the proposition is one, although not one in the strictest sense; nor was this question asked, namely, whether the one is sighted and the other blind, wherefore one should not respond to this question. And if someone were to say that this is the response Aristotle indicated to the question 'Are these [people] blind?' I say that this is not so, but he could indeed indicate that once one has given one solution, namely, that they are not blind, then in order to clarify this solution one

137. Since the comparison involved in the oblique question of the previous sentence was in the reverse order in the Hubein text, this reply was rather odd there. Johannes Rustenberg's text solves the problem by providing the comparison in the order translated here.

138. In the posited case the proposition 'Ten are sighted' is false; therefore, its contradictory, 'Ten are not sighted', is true. But the proposition 'Ten are non-sighted' is false, since only 'Two are non-sighted' is true. Therefore, 'More are sighted than non-sighted' is true, since both 'Eight are sighted' and 'Two are non-sighted' are true, and eight are more than two. Still, 'More are sighted than are not sighted' is false, since 'Ten are not sighted' is true, and only 'Eight are sighted' is true and ten are more than eight.

139. Aristotle, *On Sophistical Refutations* 5.160a13–17.

140. Again, the difference is between the truth-conditions of affirmative and negative propositions.

may give the reason why they are not said to be blind; for this is so because although one of them is blind, the other is not blind but sighted.[141]

The third mode can comprise propositions having subjects and predicates made up of several terms in the fashion of the combination of determination and determinable, as for example in the question: 'Is man an irrational animal?' For if I say yes, then it follows that man is animal and irrational, for both were affirmed of 'man', and if I say no, then it follows that man is neither an animal nor irrational; for just as someone who responds affirmatively affirms both, so too, he who responds negatively denies both. And I say that I should reply absolutely no, and by so replying I deny both, namely, both 'animal' and 'irrational', not as two predicates but as one predicate. But you argue as though they were denied of 'man' in the guise of two predicates, whence you are guilty of [committing] this fallacy, by arguing about a question that is one and a response that is one, as if they were a question that is multiple and a response that is multiple.

The fourth mode involves a proposition the subject or predicate of which is hypothetical, for example, if the question is 'Is Socrates a man or a donkey?' or even 'Is Socrates a man and a donkey?' For if you say yes, then you affirm both [terms] of Socrates, since for whatever reason you affirm one, then for the same reason you affirm the other, and then it follows that Socrates is both a man and a donkey; and if you say no, then you deny both [terms] of Socrates, since for whatever reason you deny one, for the same reason you deny the other, whence it follows that Socrates is neither a man nor a donkey. I respond, as I did earlier, that in affirming I affirm both and either of them, but not taken separately, as two predicates, but either of them in conjunction with the other, as one predicate, and the same goes for the denial; but you argue as though I affirmed or denied them as several [individual] predicates. If, therefore, you ask about the conjunctive predicate, I will deny it absolutely, and if you ask about the disjunctive predicate, I say yes without qualification, for a conjunctive whose one member is false is absolutely false, and a disjunctive whose one member is true is absolutely true.

Concerning this point there is considerable doubt as to how we should respond to the question: 'Is a chimera a being or not?' And it seems to me that this is not a complete question, unless it is taken to be a categorical question.

141. Here similar considerations apply as in the previous case, namely, checking the number of things of which, *taken together,* either of the two plural predicates is verified. But since in the given case 'are blind' is not verified of the two persons taken together, since one of them is sighted, its denial, 'are not blind', has to be accepted as true. Nevertheless, for the same reason the predicate 'are non-blind' should also be denied of them, so 'are not non-blind' would also have to be accepted as verified of these two persons.

But then we have to say that it has a disjunctive predicate; however, the word 'not' taken significatively, since it is purely syncategorematic, cannot be a part of a disjunctive predicate forming a disjunction with the term 'being', unless another categorematic term is added, as in asking: 'Is a chimera a being or a non-being?' or in some other way.

Therefore, it seems to me that this question can be supplemented or expounded in several ways. In one way, so that the negation in the supplementation does not precede the copula but only the term 'being', which it infinitizes, and then the question will be: 'Is a chimera a being or a non-being?'; and the response will be no, for it is neither a being nor a non-being; therefore it is not a being or a non-being. In a second way it can be supplemented so that the negation in the supplementation precedes the copula, and the question will be: 'Is a chimera a being or is it not a being?' And we should say yes, for in this way it concerns the proposition 'A chimera is a being or it is not a being', which is true and should be conceded. Thus the first question concerned only the disjunctive predicate, the second the predicate and copula in disjunction.[142] In a third way it can be supplemented by using a proposition in disjunction with the other, and then the question will be: 'Is a chimera a being or is a chimera not a being?' And I say yes, for the question concerns a disjunctive proposition that is true. Or again, in this third way the negation could be placed before the whole of the second categorical, so that the second categorical would be the contradictory of the first, thus: 'Is a chimera a being or is no chimera a being?', and here we should again say yes, as above.

In a fourth way it can be supplemented so that the disjunction disjoins a question from a question in the following manner: 'Is a chimera a being or is a chimera not a being?' And then we would have two questions, concerning two categoricals, but these would be propounded disjunctively. And they could be propounded conjunctively as well, by asking: 'Is a chimera a being and is a chimera not a being?' And if we wanted to reply to both, then we would have to give its own [individual] response to each, namely, to the first that it is not so, and to the second that it is so; for the first asks about the categorical

142. The point is that since 'chimera' supposits for nothing, every affirmative categorical with a nonampliative predicate and with 'chimera' as its subject is false. Therefore, the contradictory of any such proposition will be true. But a contradictory is formed by denying the original proposition's copula, not its predicate term. So, since of 'chimera' neither 'being' nor 'non-being' is verified in an affirmative proposition, 'A chimera is a being or a non-being' is false, whence 'A chimera is not a being or a non-being' is true. On the other hand, 'A chimera is a being or it is not a being' is true, since the second member of this disjunction, 'It is not a being', is true, because its contradictory, 'It is a being', is false, given that the subject 'it' refers to the same as 'chimera', and so in this context, like 'chimera', refers to nothing.

'A chimera is a being', which is false, and the second asks about 'A chimera is not a being', which is true, and so has to be conceded. And we should note that there is a difference between asking those two questions conjunctively or disjunctively, for if they are asked disjunctively it is enough if the respondent replies to one of them, whichever he likes, but if they are asked conjunctively, if he is to satisfy the person who is asking, he has to reply to both.

Furthermore, in a fifth way, the aforementioned question can be analyzed in such a way that it concerns only the categorical 'A chimera is a being', and the clause 'or not' is then added simply to indicate that the respondent should reply determinately with either a yes or a no. And it seems to me that opponents who usually formulate their questions thus intend them to be taken in this last way.

Yet again, this [fourth] mode can be brought to bear where a categorical proposition with a hypothetical subject or predicate is in question, as, for example, when the question is the following: 'Is Socrates a man and a donkey?', or 'Is Socrates a man or a donkey?' If you reply that this is so, then you affirm both, as was said at the beginning [of the discussion] of this mode, whence you affirm that Socrates is a donkey; but if you say that this is not so, then you deny both, whence you deny that Socrates is a man. [To this] I reply that in this conclusion you err in terms of this fallacy, for you draw the conclusion as if I affirmed or denied 'man' or 'donkey' of Socrates separately, as two predicates; but I do not do so, but rather I affirm or deny them together, as one disjunctive or conjunctive predicate; if, therefore, the question concerned the disjunctive predicate, then I reply absolutely that this is so, and if it concerns the conjunctive predicate, then I reply absolutely that this is not so. And whoever draws the conclusion shown above is guilty in terms of this fallacy.

The fifth mode concerns hypothetical propositions, as when, for example, the following question is asked: 'Are you a donkey or is there a God?', or 'Are you a donkey and is there a God?' If you say yes, then one argues as above that you concede that you are a donkey, and if you say no, then you deny that there is a God. [To this] you should respond analogously to what was said above, namely, that you concede or deny both, not separately, as two propositions, but rather together, as one hypothetical proposition; whence the [alleged] conclusion does not follow.

The sixth mode would concern a proposition that is multiple on account of equivocation or amphiboly, were we to extend this fallacy to those of words, as we did with the fallacy of *ignorantia elenchi.* And some people then say that the proposition 'Every dog is a substance' should be absolutely conceded, even if we take 'dog' in its three different significations, whereas 'Every dog is capable of barking [*latrabilis*]' should be absolutely denied. But they are wrong, for that expression would not be a proposition, nor would there be

a question about it, but rather nothing would be propounded or questioned, or otherwise it would be many propositions and questions taken separately., Therefore each one of them should be answered separately, even if all were to be conceded; alternatively, one should say something to the same effect, namely, "Dear sir, I say that there are three propositions or questions here, each one of which I concede (or deny)." But I omit this mode as being one that belongs to the fallacy of equivocation or amphiboly.

The seventh mode would concern a proposition that is multiple because of its several unconnected predicates or subjects, as for example, if someone were to ask: 'Is Socrates a man, a donkey?' or 'Is a man, a stone an animal?' If one says yes, the response is not correct, and neither is it correct if one says no. For either there is no question here, because of the disconnectedness of the expression, or rather, with some supplementation, one has two unconnected questions and propositions here, namely, 'Is Socrates a man?' and 'Is Socrates a donkey?; and if one has to answer, then they both have to be answered separately. For if one were to say yes or no without any qualification, then one would either concede or deny both or neither, since for whatever reason [one would grant or deny] the one, for the same reason [one would grant or deny] the other, and if both, then this would not concern them taken together, as a single proposition, for this is not the way in which the question was asked, but separately, as two propositions; whence it would follow that any one of them should be affirmed or denied separately, but that would amount to stating something false.

The last mode concerns a proposition that is multiple in one of the last modes distinguished in the seventh section, as when the following question is asked: 'Whether you are a man, you are a donkey?', or even 'Whether man is a donkey, there is not a God?' For we should not reply absolutely 'Yes' or 'No', but you ought to reply in the manner recommended in connection with the previous mode.

But you might say that there is only one question here, because only one interrogative sign is posited, namely, the single 'whether'. I reply that if there is only one 'whether', both in intention and in utterance, then that series of utterances is neither a question, nor is it questions, because of defectiveness of the construction arising from the lack of connection between the utterances. For one interrogative sign cannot be connected in a [grammatical] construction with several unconnected propositions; it is necessary, therefore, if there is to be some question here, that both questions have their own 'whether'. And then there will be two unconnected questions here, as though we asked: 'Are you a man? Are you a donkey?'; therefore each should be given its appropriate answer, or else something unacceptable will follow, as has been pointed out.

7.4.8 The number of fallacies

(1) From what has been settled so far it is clear that under the general name 'fallacy' thirteen species of fallacies are contained. (2) Notwithstanding the fact that these, or some of these, may concur in the same sophistic argumentation, they do not, nevertheless, concur in the same cause of illusion and in the same cause of defectiveness. (3) Now these are not the most specific species, but subaltern species that can be subdivided into several other species, whence they could also be called thirteen genera of fallacies, namely, subaltern genera. (4) And one might posit more or fewer species of fallacies covering all nonconcurrent fallacies depending on whether one stayed at the earlier divisions or proceeded to the later ones.

The eighth and final part of this chapter infers the number of fallacies from the points that have been settled earlier, namely, that they are thirteen in species and that the names of those species have been given above. And this is what the first section says in the present part.

This number, in accordance with what has been settled so far, can be worked out by first positing that a sophist, intending primarily the deception [*fallaciam*] of the respondent, so as to appear wise when he is not, aims at constructing an elenchus directed against the respondent's claim that is not genuine but merely apparent. Now an elenchus is a syllogism directed at contradiction, or, taking 'elenchus' more broadly, an argumentation directed at contradiction. Thus, when a fallacy occurs on account of the defectiveness of an elenchus with an illusion [of a genuine elenchus], this may happen in two ways: in one way on account of the defectiveness of the contradiction, in the other way on account of the defectiveness of the argumentation. And in the first member of this division we have the fallacy of *ignorantia elenchi,* and this member remains undivided in this enumeration, although it might be subdivided, for this fallacy might occur both in words and apart from words.

Again, the mode of deceiving in words is divided into six fallacies, as was clarified earlier. The mode of deceiving apart from words on the part of the argumentation, however, occurs *either* strictly because of defectiveness of the *proof,* i.e., because of lack of knowledge of the antecedent, even though the consequence is valid, and this is the fallacy of begging the question [*petitio principii*], *or* because of defectiveness of the consequence. And then the defective consequence is either constructed in the likeness of a syllogism or not; if it is, then it either resembles an ostensive syllogism, in which case it is called the fallacy of accident, or it resembles a syllogism concluding to something false or impossible, and then it is called the fallacy of non-cause as cause. And if the consequence is not constructed so as to resemble a syllogism, then it is

based on an apparent relationship either of a term to another term, in which case we posit the fallacy of *secundum quid et simpliciter,* or of a proposition to a proposition, in which case we posit the fallacy of [taking] many questions as one, or of a consequence to a consequence, in which case we posit the fallacy of the consequent. And all these points were stated earlier; so this is just a gathering and recapitulation of points that have been settled.

In the second section of this part it is remarked that sometimes some of these fallacies may well work together in the same paralogism; still, they are formally distinguished in the same on account of their diverse causes of illusion and defectiveness. And this is why Aristotle says, in bk. 2 of the *Sophistical Refutations,* that nothing prevents the same expression from offering several opportunities for deception.[143]

The third section states that these thirteen fallacies, or species of fallacies, are not the most specific species. And the fourth shows that one might sort out a greater or a smaller number of fallacies.

And all these points are obvious from those settled above.

7.5 Chapter 5: On how the fallacies are naturally capable of leading to the metas

7.5.1 The common features of all fallacies

(1) Some of the fallacies described above are more apt to lead to certain metas [than others]. (2) But none of them leads to a meta with the force of a proof, for then it would not be a sophistic argumentation but a truly probable or demonstrative argumentation. But each one is capable of apparently leading the inexperienced into one of the five metas mentioned above. (3) But every fallacy is capable of apparently leading to a refutation, and this occurs when the conclusion to which the opponent really or apparently concludes contradicts or apparently contradicts the position of the respondent.

143. Aristotle, *On Sophistical Refutations* 24.179b17.

The fifth chapter discusses fallacies insofar as they are apt to lead to the metas intended by sophists. And it has six parts. The first shows what in this regard applies to all fallacies; the second manifests which fallacy appears to lead most properly to refutation, the third, which one to falsity, the fourth, which one to something implausible, the fifth, which one to solecism, and the sixth, which one to redundancy.

The first part states, first, that some fallacies are more apt to lead to certain metas, and this will be clarified in the other parts. And 'meta' is taken here in the sense described in the first part.

The second section declares that no fallacy leads demonstratively to a meta because for this to occur it would be required that the argumentation validly entail and prove the conclusion. Further, if it were to lead to a refutation, it would also be required that the conclusion, validly entailed and proved, contradict the position of the respondent; and none of the fallacies now in question is such that it would not fall short of one of these requirements.

The third section states that any fallacy is naturally capable of leading to a refutation and makes sufficiently clear how this claim is true.

7.5.2 Which fallacy appears to lead most properly to refutation

> It is the fallacy of *ignorantia elenchi* that most appropriately appears to lead to the meta of refutation. For it is this fallacy, given that no other fallacy concurs, that sufficiently proves its conclusion, which appears to contradict the position of the respondent, although it does not contradict it. And it is in this that the nature [*ratio*] of this fallacy consists, as was clarified earlier. And this constitutes an apparent refutation, until the respondent shows that he is not contradicted.

The second part clearly shows that it is the proper characteristic of the fallacy of *ignorantia elenchi* to appear to lead the respondent to a refutation. And it indicates how the respondent can avoid appearing to be refuted; for he will achieve this end if he clearly shows that the conclusion of the opponent does not contradict him, and even if he does not know how to show this with evidentness, he should nevertheless state that it does not contradict, and if he is asked: 'What is then the contradictory?', he will say that [it can be produced by] putting the negation in front of the whole proposition; for in many cases there is no other way to obtain a contradiction.

7.5.3 Which fallacy appears to lead most properly to falsity or impossibility

The fallacy of non-cause as cause most characteristically seems to lead to the meta of falsity or impossibility, for it directly assumes the position of the respondent, from which, with another apparently true or possible premise, or with other apparently true or possible premises, it concludes to a conclusion that is obviously false or impossible, and afterwards, from the falsity or impossibility of this conclusion he expressly returns to conclude that the position of the respondent is false or impossible.

The third part shows in a similar manner that the proper characteristic of the fallacy of non-cause as cause is to appear to lead the respondent to a meta. And this is called either the meta of falsity only, or the meta of falsity and impossibility. For if the conclusion reached is obviously false but not impossible, from this it is not inferred that the antecedent is impossible, but only that it is false; neither should this syllogism be called a 'syllogism *ad impossibile*' [a syllogism leading to something impossible] but a 'syllogism *ad falsum*' [a syllogism leading to something false]. But if a conclusion that is obviously impossible is concluded, then from this it is inferred that the antecedent is not merely false but impossible; and it is in this way that the syllogism is called *ad impossibile.*

And it is clear that this fallacy leads, as it were, in two ways to falsity or impossibility. For he who concedes the antecedent is obliged to grant the consequent; since therefore from the thesis along with something true there follows something clearly false, the respondent is forced to concede something clearly false, and furthermore, in the return, it is inferred that his thesis was false.

7.5.4 Which fallacy appears to lead most properly to implausibility

The fallacy of begging the question [*petitio principii*] has, rather more than the others, the property of apparently leading to the meta of implausibility. For given that the opponent does not have an argument against the respondent starting from what is better known, the respondent can reasonably deny what the opponent brings up against him, unless the opponent leans on some common authority, or on the authority of some fa-

mous teachers or a teacher who is generally respected in the place where the disputation takes place, or whom the respondent usually follows. If, therefore, the respondent denies that [claim], then he seems to have been led to something implausible if he does not have a sufficient excuse [for his denial].

The fourth part propounds and declares that the fallacy of begging the question has the property of apparently leading to the meta of implausibility, rather more than the other fallacies do. And we say "rather more than the other fallacies do," because when we say that the fallacy of *ignorantia elenchi* has the property of leading to an apparent refutation, we do not intend to exclude the fact that there are other fallacies that can also lead to refutation, but we wish to say that that fallacy more aptly and manifestly does so, and we want to speak analogously about fallacy of non-cause as cause with respect to [the meta of] falsity, and about begging the question with respect to [the meta of] implausibility.

But the respondent can remove the apparent unacceptability of this meta by saying in the beginning that he posits his thesis regardless of the fact that such and such teachers are of the contrary opinion. For then he does not appear to be led to those implausible positions by the force of the argument of the opponent, which is required to the meta. Or, if he does not say this in advance, since he perhaps did not realize this possibility, he has to come up with authoritative dicta of other teachers against the authorities of the opponent, if he has any; for authorities set against authorities remove the implausibility; or he has to work on the exposition of the authorities [of the opponent], interpreting them in a sense that does not go against him. And if he cannot do otherwise, he has to say that he provided that opinion knowing that great teachers were of the contrary opinion, so that the opponent could show, if he were capable of so doing, how these authors could demonstrate their opinion and destroy the one [the respondent] presented; for in such a case their authoritative dicta should not be accepted [on the basis of authority alone].

7.5.5 Which fallacy appears to lead most properly to solecism

It is especially the fallacy of figure of words that usually appears to lead to the meta of solecism. For a solecism is a breach of the rules of grammar, and grammar is especially concerned with the similarities and dis-

similarities of significative utterances, and it is by reason of these that the fallacy of figure of words comes about.

The fifth part states that it is mostly by the fallacy of figure of words that we can apparently be led to the meta of solecism, and it provides the obvious reason for this. And this is clear especially concerning the first mode of this fallacy. For when we believe something that is of the masculine gender to be of the feminine gender, or conversely, we speak ungrammatically. Whence this is how those who do not know the rules of grammar and their exceptions are often deceived. For someone who does not know the rule that the names of rivers are of the masculine gender will say: *Sequana est humida'* [The Seine is wet—using, ungrammatically, the word for 'wet' in the feminine gender], just as we say this about water [*aqua,* f.]; again, someone who does not know the rule about names of trees will say: *Quercus est magnus* [An oak tree is big—using, ungrammatically, the word for 'big' in the masculine gender], and if he knew the rule but was ignorant of its exceptions, he will say: *Rumnus est spissa, vel grossa* [A *rumnus*[144] is thick, or big—using, ungrammatically, the words for 'thick' and 'big' in the feminine gender], and so on with other cases.

Therefore, no one can protect himself against this meta if he is unfamiliar with the rules of grammar. And Aristotle, in bk. 2 of the *Sophistical Refutations,*[145] where he discusses solecisms, appears to touch on a mode of this fallacy that appears to lead to solecism, namely, since in many syllogisms we see that terms are taken in similar cases, we believe that this should be so in all. For having granted this, one would infer the following solecism: *Cuius habes scientiam est durum; lapidis habes scientiam; ergo lapis est durum*[146] ['That of which you have knowledge is hard; of a stone you have knowledge; therefore, a stone is hard'].

*7.5.6 Which fallacy appears to lead most properly to redundancy [*nugatio*]*

But it is the fallacy *secundum quid et simpliciter* that seems most to lead to redundancy [*nugatio*]. For in the case of relative and connotative terms

144. According to the anonymous reader, the word 'rumnus' in the text here should be 'rhamnus', which means 'blackthorn'.

145. Aristotle, *On Sophistical Refutations* 32.182A10ff.

146. The conclusion should be *lapis est durus,* so that there is proper gender agreement between the masculine subject term and the predicate term.

> a term taken *simpliciter* [absolutely] and the same taken *secundum quid* [with qualification], i.e., with the addition of some other term explicating its correlative or its connotation, appear to signify the same. Therefore, someone who believes that this term taken in any expression whatsoever can be replaced by itself with the addition explicating its connotation is deceived, and he cannot defend himself against the fault of redundancy.

In the sixth part it is declared that the fallacy *secundum quid et simpliciter* has the property of apparently leading to the meta of redundancy. And the text is clear if only we provide a little clarification by way of examples.

Let this be the example: the term 'odd' is defined by saying that [what it signifies] is a number having a unity in the middle, and 'snub' by saying that [what it signifies] is a concave nose. And you grant that in any proposition in which the term defined [*definitum*] occurs it can appropriately be replaced by its definition, and that claim [*sententia*] will not change, but rather it will be more explicit and manifest. Having conceded this, then, if you say that three is an odd number, I push you into redundancy by replacing the term 'odd' with its definition, leaving the rest as it is; for then I will obtain that three is a number number having a unity in the middle. Similarly, if you say that Socrates has a snub nose, I will take in place of the term 'snub' its definition, namely 'concave nose', and, leaving the rest as it is, I conclude that Socrates has a concave nose nose. Similarly, in grammar we say that '(I) read' [*lego*] and 'I read' [*Ego lego*] are equivalent; if, therefore, you say: 'I read', you commit redundancy; replace 'read' by the expression equivalent to it, namely, 'I read', and then you will have 'I I read'.[147]

In the same way, in the case of relatives, you cannot have in your mind the concept of one relative without the concept of its correlative, for which reason one correlative connotes the other of necessity. Therefore, 'double' and 'double of the half' signify the same to us; if you say that the double is the double of the half, then you incur redundancy, for in the predicate, I could replace the term 'double' by the equivalent 'double of the half', and thus I will have that the double is the double of the half of the half.

But how the appearance of this unacceptable result should be evaded and how such arguments should be resolved will be explained in treatise 8, which is titled 'On Definitions', when we come to the gloss of the fourth part of the second chapter.[148]

147. In Latin, the conjugated form *lego* (I read) already shows that it is first-person singular, which makes the addition of the personal pronoun, although grammatically correct, redundant.

148. See 8.2.4.

7.6 Chapter 6: On the solution of paralogisms

7.6.1 On the perfect solution of a sophistic argument

(1) Finally we should discuss in a general manner the solutions of the paralogisms, or sophistic arguments, which have been treated of in each fallacy. (2) The solution of a sophistic argument is the manifestation of its falsity, i.e., of the defectiveness on account of which it falls short of an elenchus. (3) Therefore, if the solution is to be perfect, it is necessary not only to abolish what is false but also to show the reason for that abolition.

The present chapter is the sixth and final one of this treatise, and it expounds some general ways of solving sophistic arguments in any fallacy. And I say 'general' because descending to the single defects of diverse arguments pertains to the treatise on sophistic exercises [*De Practica Sophismatum*].

And this chapter will contain eleven parts, the first of which shows in what the perfect solution of a sophistic argument consists, whereas the other parts concern the diverse fallacies, one by one.

The first part contains three sections, the first of which propounds the aim of the chapter, as has already been stated.

The second describes the solution of a sophistic argument, and it is clear, except that some people have doubts because there are two kinds of sophistic syllogisms: some are defective in matter (and these are the ones that contain falsity in their premises, or in some of them), and some are defective in form (but without having any false premises), and for this reason the description of [what constitutes a] solution provided here seems to apply only to the solution of those that are defective in matter. And this is confirmed again by what Aristotle says in bk. 2 of the *Sophistical Refutations:* "thus syllogistic expressions get abolished, and the apparent ones get solved by division,"[149] as if he meant to say that there are two kinds of solutions, namely, one that operates by the abolition of falsity, and one that operates by means of distinction, with the syllogisms that are defective in matter being those which he calls 'syllogistic expressions'. These, he says, are soluble by abolition, whereas those that are defective in form, which he calls 'apparent ones', are soluble by means of distinction. And so it would appear that the abolition and manifestation of falsity belong only to the solution of syllogisms that are defective in matter.

And I reply that every sophistic argumentation is to be solved by the abolition and manifestation of some falsity. But there are falsities other than just

149. Aristotle, *On Sophistical Refutations* 18.176b35–37.

the falsity of the premises, for sometimes we have a false consequence, sometimes a false proof, and sometimes a false contradiction. For, as is clear from bk. 5 of the *Metaphysics*,[150] entities are said to be false in a sense because they are apt to appear to be such as they are not, or to be what they are not; therefore, what appears to be a valid consequence but is not is called a false consequence, and what appears to be a proof but is not is called a false proof. A sophistic argumentation is therefore solved by showing that it is a false consequence that is to be abolished, as in the case of the fallacy of accident, or a false proof, as in the case of *petitio principii,* or a false contradiction, as in the case of *ignorantia elenchi.*

Therefore, what Aristotle said about the solution by abolition and distinction he did not intend to apply to all sophistic syllogisms, or sophistic argumentations, but to those that are defective in their premises. But a premise is defective either because it is false, and then it is to be abolished, or because it is ambiguous, and then it has to be distinguished. But this authority can also be expounded otherwise, namely, as saying that syllogistic expressions—syllogisms that are defective in their matter—have to be abolished with respect to the false premise, but the apparent ones—those that are defective in form—should be solved in accordance with their appearances, declaring the diverse modes of their solutions one by one and separately in accordance with the diversity of the fallacies concerned, and insofar as they do not call for solution in the same way.

The third section concludes from the second to two requirements needed for a perfect solution. For it is not sufficient to abolish something false if it appears to be true, unless its falsity is made manifest. For the audience will believe that he [the respondent] not rightly, but wrongly, abolishes a proposition or a consequence or a contradiction and that he does so because he does not know how to solve the argument.

7.6.2 The solution of the fallacies of equivocation and amphiboly

For the solution of the fallacies of equivocation and amphiboly, therefore, one has to distinguish between the various types of ambiguity. Hence, if it is the conclusion that is ambiguous, then, when it has been stated, the respondent has to present the sense in which he propounded his own

150. Aristotle, *Metaphysics* V.29.1024b22–24.

thesis, and he has to show that the argument of the opponent does not conclude against that sense but against some other. If, however, it was not the conclusion but rather a premise that was ambiguous, he has to show that in the sense in which the argument concludes against him it is false, and that in the other sense the consequence is not valid.

The second part clearly shows how the paralogisms of equivocation and amphiboly are to be solved, so all that remains to be done is to present some examples. Aristotle gives the following example of an ambiguous conclusion.[151] Let the respondent say that it is not possible to say something being silent, intending that the proposition 'Someone says something being silent' is impossible, and let the opponent argue against him thus: "It is possible to say what he says, but he says 'something being silent'; therefore, it is possible to say something being silent."[152] The respondent, therefore, solves this by distinguishing: "the expression that you conclude to, namely 'It is possible to say something being silent', has two senses; one sense is used when 'being silent' is construed with 'to say' as the latter's temporal adverb, and then it signifies that it is possible that someone while being silent says something; but the other sense is used when 'something being silent' is construed with 'to say' as the latter's object, and then it signifies that it is possible for someone to say [the words] 'something being silent'."[153] And then the respondent will further say: "Dear sir, I propounded my thesis in the first sense, namely, that it is impossible for it to be the case that someone being silent says something, and you argue in the other sense, namely, that it is possible for someone to say [the words] 'something being silent', and this does not contradict [my thesis]."

Aristotle gives the following example concerning an ambiguous premise:[154] 'Whatever Socrates does not know that does not know, but he does not know

151. Aristotle, *On Sophistical Refutations* 4.166a12–14; 19.177a26–27.

152. I somewhat changed the construction of the original so that the opponent's argument will have some appeal in English, at least when spoken, when we cannot use quotation marks to disambiguate the construction. In Latin the ambiguous construction, *Possibile est tacentem dicere,* may be interpreted either as 'It is possible for someone silent to say something' or as "It is possible [for someone] to say 'silent'."

153. In the original Latin construction Buridan distinguishes the two senses with reference to a disambiguating word order, matching the conceptual order. Construing *possibile est tacentem dicere* so that *tacentem* precedes *dicere* (as he says, construing it *a parte ante*), we get the sense 'It is possible for someone silent to say something'. Construing it as if *tacentem* followed *dicere* (as he says, construing it *a parte post,* as if the utterance were *possibile est dicere tacentem*), we get the sense "It is possible [for someone] to say 'silent'."

154. Aristotle, *On Sophistical Refutations* 4.165b7–9.

someone who knows; therefore, someone who knows does not know'. The respondent will reply that the major premise is ambiguous: in one sense the word 'that' is in the nominative case, and thus the premise is false; in the other sense it is in the accusative case, and in this way it is true, but the conclusion does not follow from the premises.[155]

And it is clear that there is always some falsity that is abolished, either the falsity of the contradiction (as in the first example) or the falsity of the premise in one sense and the falsity of the consequence in the other sense (as in the second example).

But it is still possible that an ambiguous term be placed in both premises and that both premises should be distinguished, and the major should be denied in one sense and the minor in the other, and if the major and the minor were both taken in the sense in which they are true, then the consequence would be invalid, as in the following paralogism: 'Every dog is a barking animal; some fish is a dog; therefore, that is a barking animal'.[156]

7.6.3 The solution of the fallacies of composition and division

And it is in a similar manner that paralogisms of the fallacies of composition and division, as well as those of accent, are to be solved, the difference being that in their case the proposition is not absolutely the same in utterance but has different senses, as is the case with equivocation and amphiboly. Therefore, we do not here have a proposition that has to be

155. That is to say, in the first sense the major premise would say that whatever it is that Socrates does not know, that thing does not know [anything], which is false, for Socrates certainly does not know some person or other who knows something. On the other hand, in the second sense the premise says that of whatever Socrates is ignorant, that he does not know, which is certainly true of necessity, but of course this does not imply that if Socrates is ignorant of someone who knows something, then that person knows nothing. Admittedly, this construction is rather strained in English; we would have to say 'Whatever Socrates does not know, that [he] does not know', but then the insertion would spoil the ambiguity of the original: *quidquid Socrates ignorat, hoc non scit.*

156. The Latin term *canis* in one sense refers to dogs, but in another sense it was also used to refer to some unspecified marine animal, perhaps a seal, thought by some to be a fish. In any case, as Buridan often says, an example need not be true in order to illustrate a point.

distinguished, strictly speaking, but one has to show how in the same matter of the utterance there are several propositions or words that are diverse in form and that have or make diverse senses.

What is said here about the solutions of the paralogisms of composition and division, and of accent, is clear enough to anyone willing to consider what has been discussed so far. For if in the conclusion there is along with the material identity of the utterance a formal diversity, on account of which there are diverse propositions, even where the utterance is concerned, then this has to be made manifest. And the respondent should say: "I conceded the composite [form] and you have disproved the divided," or conversely, or "I conceded the conclusion with such and such an accent and you have disproved it with another." And if the potential ambiguity occurs in a premise, then he has to say that the composite [form] is false and that from the divided [form] the conclusion does not follow against him, or conversely, and the same applies analogously where accent is concerned.

7.6.4 The solution of the fallacy of figure of words

In the fallacy of figure of words the solution is to be provided by saying that to words that are similar in utterance there do not have to correspond similar modes of signification, but in this matter one has to follow the rules of grammar and their exceptions; again, it is not necessary that words that are similar in utterance or in grammatical modes of signification have similar forms of predication (that is to say, that they belong to the same category) and that under the distributive sign of one category one must not subsume terms from another category. And thus it is indeed necessary that in accordance with the diverse modes of this fallacy we should assign diverse defects, but there is no need to attend to the spoken similarities of words or expressions, for words are imposed to signify by convention [*ad placitum*], so that sometimes similar ones signify dissimilar things, and sometimes dissimilar ones signify similar things.

The fourth part discusses the solutions of the paralogisms of figure of words. And just as it is difficult to assign and distinguish the modes of this fallacy in an adequate manner, so also it is difficult to sort out its appropriate solutions in all of its modes. What we basically have to point out, however, is that it is not necessary that words similar in utterance have similar gram-

matical modes of signification nor similar predicamental forms. For the words *simus* [snub] and *sidus* [star] are very similar in their utterance, but they belong to diverse genera, as well as to diverse declensions and to diverse categories; and the same goes for *secare* [to cut], *amare* [to love], and *substare* [to stand under].

Those, therefore, who have sufficient knowledge of the modes of signification in accordance with the rules of grammar, as well as sufficient knowledge about the distinctions between the categories, the distributive signs properly pertaining to them, and the terms contained under them, can perfectly well solve the paralogisms of this fallacy and reveal their defects.

7.6.5 The solution of the fallacy of accident

> The common solution of the fallacy of accident involves pointing out that the conclusion does not follow from the premises, as Aristotle says.[157] But furthermore one has to show in each paralogism why it does not follow when it appears to follow, as we indicated at the beginning of this chapter.

The fifth part, concerned with teaching how to solve paralogisms of the fallacy of accident, is so obvious that it does not need any explanation. For it is not necessary here to go into any discussion of the particular paralogisms of this fallacy, since they are almost infinite, and they have almost infinitely diverse defects, but it belongs to the task of the respondent to determine them in the paralogisms that come his way.

7.6.6 The solution of the fallacy secundum quid et simpliciter

> Similarly, in the case of paralogisms of *secundum quid et simpliciter* one usually has to deny the consequence and to determine the cause of falsity on the basis of the relationship between the addition and the absolute

157. Aristotle, *On Sophistical Refutations* 24.179a26–32.

predicate to which it is added. For certain consequences are true (or false) if that addition is purely restrictive, others if it is ampliative, others if it is alienating the supposition, and others if it shares in several of these conditions. Therefore the respondent has to show this to the extent required by the paralogisms presented to him.

What is said here about the paralogisms of the fallacy *secundum quid et simpliciter* was made sufficiently clear in the discussion of the four distinct modes of this fallacy that were sorted out in the second part of the fourth chapter. To those four one may appropriately attach a fifth, which especially leads to the meta of redundancy, as discussed in the sixth part of the preceding chapter, where it was also referred back to the place where the solution of paralogisms was discussed.[158]

7.6.7 The solution of ignorantia elenchi

Paralogisms of *ignorantia elenchi* are to be solved by abolishing the contradiction between the conclusion and the thesis of the respondent. And one has to reveal the defect that leads to there being no contradiction, even though there appears to be a contradiction. But to discuss those defects in detail pertains to the sophistic exercises.

Everything stated in this seventh part is clear. And we should remark that one should reduce to the solution of this fallacy the solutions of all sophistic arguments that appear to hold by virtue of the locus from contradictories,[159] which argue thus: 'the contradictory of the sophisma is true; therefore, the sophisma is false', or 'the contradictory of the sophisma is false; therefore, the sophisma is true';[160] for here the consequence is necessary. But one has to examine very carefully whether the contradictory claim be indeed correctly formed, and if not, then this has to be pointed out, and then the argument is solved.

158. See 7.5.6.

159. See 6.5.1.

160. Note that 'sophisma' in this context refers not to a sophistic argument but to a problematic thesis, which in an actual disputation may be attempted to be proved or disproved by sophistic arguments.

7.6.8 The solution of petitio principii

> Paralogisms of the fallacy of begging the question [*petitio principii*] are to be solved by the abolition of the premises, or of some of them, but not because they are, or are believed to be, false. For the respondent often knows or believes that they are true and that the conclusion inferred against him is true, and that his thesis is false, which he nevertheless stated to see how the conclusion put forward could be demonstrated against someone who wanted to resist it. Under such circumstances it is permissible for him to deny every proposition granted against him that is equally or more doubtful than would be the conclusion to be demonstrated against him, as being one that is of no use in the demonstration of that conclusion.

Everything that is said in this eighth part was quite clearly explained in the exposition of the fourth part of this chapter. And it is certain that it is not only permitted but good and expedient, even in a demonstrative disputation, that the respondent, or someone acting as a student, should assume the role of holding the contradictory of the conclusion to be demonstrated and should cavil as he can against the demonstrator, so as to show how those cavils can be eliminated; for it is by their clear elimination that the principal demonstration will become firmer and more evident.

7.6.9 The solution of the fallacy of the consequent

> Furthermore, paralogisms of the fallacy of the consequent are to be solved by denying the convertibility of the consequence and by assigning the ground of this denial, namely, that it is not necessary that the antecedent follow from the consequent of a valid consequence, nor that the opposite of the consequent follow from the opposite of the antecedent, unless the terms are convertible; and it is not difficult to show this.

These points are easy and do not need explanation.

7.6.10 The solution of the fallacy of non-cause as cause

In the case of the fallacy of non-cause as cause, in order that the paralogisms may be clearly solved, we first of all have to consider whether the conclusion follows necessarily from the premises. And if not, then this is to be pointed out, and then any further reasoning is invalid. But if so, we still have to see whether the conclusion is false or impossible, and if it is not, then returning to the premises to conclude to the falsity or impossibility of one of them is invalid; if, however, the conclusion is false or impossible, then we should consider whether, on the removal of the premise that is concluded in returning [to the premises] to be false or impossible, the conclusion of the first syllogism still does or does not follow from the remaining premises. If so, then the return to that premise is not valid, for it is not a cause of the entailment of the conclusion; if, however, the conclusion does not follow from the other premises without that premise, then we have to see whether any of the other premises is false or impossible. If so, then the consequence by which it was inferred that the premise in question was false or impossible was not valid; if, however, none of the others is false or impossible, then we still have to see if those premises are incompossible, even though both are possible; but if none of the other premises is false or impossible, and neither are these premises incompossible, then the argumentation is demonstrative, and it cannot be solved, unless perhaps it fails by begging the question.

The tenth part teaches how to solve paralogisms of the fallacy of non-cause as cause. And whatever is said here is clearly stated, assuming what was said earlier, namely, that this fallacy occurs in syllogisms or apparent syllogisms leading to impossibility or falsity. And when it is said: 'we have to see whether any of the other premises', then it is understood to refer to the case when there are more than two premises, but if there are only two, then we have to see whether the other premise [is false or impossible].

7.6.11 The solution of the fallacy of many questions as one

Paralogisms of many questions as one are resolved by checking to which of the sorts of questions—those that are one or those that are many—the

question of the opponent pertains, and by responding either with one response or with many, and affirmatively or negatively, in accordance with the exigencies of a question of the given sort. And if the argument of the opponent is valid concerning not the sort of question to which the reply was given, but concerning another sort, then this should be pointed out, and thus the argument will be resolved.

Considering what has been said about this fallacy earlier, everything that is said here is clear.

Therefore, this much about the fallacies should be enough for youngsters.

Treatise 8
On demonstrations

First subject matter: On divisions

8.1 Preface

Now it remains to discuss demonstrations. But these presuppose definitions; therefore, we should also treat of definitions. However, the investigation of definitions benefits [a great deal] from the art of division; hence we also have to deal with divisions. But our author did not discuss divisions, although [the art of divisions] is a very important and ultimate part of logic.[1]

8.1.1 On the art of division

In accordance with what was said at the beginning, this is the eighth treatise of this work. It deals with three principal subjects, first, with divisions, second, with definitions, and third, with demonstrations. The first subject is handled in one chapter, which is about divisions, and has eight parts. The first of these propounds the aim of this treatise, the second describes composition and division, the third shows which things are compounded and divided, and also which things compound and divide, the fourth distinguishes the diverse modes of wholes and parts, the fifth distinguishes different modes of division, the sixth distinguishes [various kinds of] the predicable whole, the seventh describes all characteristics [*omnes virtutes*] of complete division, and the eighth appends to the above-described modes certain other modes of division, which are metaphorically[2] called so. The first part is obvious in itself.

1. *Pars logicae magis notabilis et finalis.* The theory of divisions, which is presented here as a necessary prerequisite for the theory of definitions and demonstrations, is probably taken to be 'ultimate' by Buridan both in the sense that this is the last of the systematic treatises before the collection of logical exercises in the *Sophismata,* and also in the sense that the whole enterprise of logic culminates in the theory of demonstrations, which provide us with scientific knowledge.

2. This is my tentative emendation of de Rijk's reading (i.e., reading *metaphorice* for *metaphysice*), given that in the passage in question Buridan discusses certain forms of expression that are called divisions only in an improper, i.e., metaphorical sense (in any case, there are no deep metaphysical issues involved in the divisions discussed there).

8.1.2 On division and composition in general

> In terms of its most common description, therefore, division is the separation of several things gathered into one, and composition, its opposite, is the gathering together of several things in one, and that one is called 'whole' and those many things are called its 'parts'.

The second part describes division and composition in general. And both the names in the descriptions and the ones described have quite a number of senses, as will be seen in what follows. Finally, it is noted that a division is [the dividing] of a whole into [its] parts, and a composition is [the putting together] of the parts into the whole, so that in a division we proceed from something unitary, which we call 'whole', as from the *terminus a quo* [the initial state], to a multiplicity of what we call 'parts', as to the *terminus ad quem* [the final state], and in a composition [this happens] in the other direction.

8.1.3 How parts are said to be divided

> By the names 'composition' and 'division' several things are denominated as being compounded or divided, as well as performing the compounding or dividing. For parts sometimes are said to be compounded [*componi*] in that they are, as it were, put together in one whole [*quasi simul in unum totum poni*], and in this sense every part is rightly said to be compounded with another; but sometimes, and more often, we say that a whole is composed [or compounded] of several parts. Analogously, sometimes we also say of the parts that they are divided from one another, and also that a whole is divided into parts; but we sometimes also say that the parts compose the whole and sometimes that the parts divide the whole.

The third part shows which things are said to be compounded or divided, as well as which things compound or divide; and the text is clear. But even if such locutions are allowed, not all of them are proper. For it is more properly said that one part is compounded with another, i.e., that it is put together with the other, or that the parts are compounded, i.e., that they are put together; and similarly, it is properly said that a part is divided, or separated, from, another part, or that parts are divided from one another. But when we say that the whole is composed of its parts, this signifies that from the composition of the parts, there results one whole, and when we say that the whole is divided

into parts, then this signifies that as a result of the division of parts the whole is resolved and it ceases to be one whole—if it is division in the proper sense, just as when a log of wood before the separation of its parts is said to be a whole and one, and afterwards it is not said to be either a whole or one. But when we say that the parts compound or divide the whole, this is not a proper locution. For it is instead the builder who divides the parts of wood, and he is the one who compounds and arranges the parts of the house and makes them into one house, and again, it is the man sawing, or the saw, that divides the parts of a log one from another and brings it about that they are no longer one whole log. If, therefore, we say that the parts compose the whole, the sense of this is that it is on account of the composition of its parts that something is or is said to be one whole; similarly, if we say that the parts divide the whole, the sense of this is that on account of the division of the parts from one another, they cease to be one whole, or cease to be said to be one whole.

8.1.4 On the two kinds of wholes and parts

There are two principal senses in which we talk about whole and parts. In one sense we talk about an integral whole and integral parts; in another sense we talk about a predicable whole and its subjective parts. They differ because all the parts of an integral whole taken collectively are one whole, but none of them [taken alone] is that whole, whereas the parts of a predicable whole are not that whole, but that whole is truly predicated of each and any one of them. For two units [taken together] are two, and two [things] and three [things], which do not have a common member, [taken together] are five [things], and a soul and a body [taken together] are an animal. But although several species are not one genus, nor are several singulars one species, nevertheless, their genus is predicated of any of its species, and their species is predicated of any of its singulars.[3]

3. For modern readers, who tend to understand *species* and *genus* "extensionally," i.e., as referring to collections (or "sets") of individuals of which a specific or a generic term can be truly predicated, what Buridan says here may sound surprising. For clearly in this extensional sense, for instance, the genus of animals is nothing but the species of humans and the (not most specific) species of brute animals, taken together. So why does Buridan say here that several species are not one genus? The answer, of course, is that Buridan, as well as other medieval authors, did not interpret species and genus in this extensional sense: *species and genera are not collections of individuals.* So, for instance, the species of human beings in

In the fourth part two kinds of wholes are distinguished, namely, integral and predicable wholes; and an obvious difference between them is provided. We should note, however, that sometimes an integral whole is properly said to be one, either on account of the form's union with matter [*informatione*], as with an animal, whose parts are the body and the soul, or on account of continuity, as in the case of a piece of wood, whose quantitative parts are wood[-parts] that are continuous with each other. Sometimes, however, an integral whole is not properly and absolutely [*simpliciter*] said to be one [thing] or a being, but with an addition [*cum additione*], as is the case with one number, one house, one army, or one people. And the unity is observed here either on account of a single numerical concept, by means of which we numerically count several things together, as for example one man, one horse, and one goat are one triad [*unus ternarius*],[4] or on account of the relationships of several things to one another and to some one thing, because of some one goal, as when the commander and several others related to him and to one another in order to defeat the enemy are one army, or on account of aggregation and arrangement, as with one house, or merely on account of the aggregation of several bodies, as with one heap, or on account of the unity of location, namely, of their country or city, as with a people, and so on for many others, in various ways.

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this sense is not mankind, i.e., not the collection of all human beings taken together. The species of humans is a universal (i.e., in Buridan's interpretation, a concept of a mind by which all and only human beings are essentially conceived, or any term of any spoken language subordinated to such a concept), which is truly and essentially predicable of all and only individual humans. And the species of brute animals is likewise a universal, predicable of individual brute animals. But, of course, even if the collections of humans and brute animals taken together are the same as the collection of all animals, the universals 'man' and 'brute animal' taken together are not the universal 'animal'. Indeed, even if we take these universal terms significatively, we cannot truly say that a man and a brute animal are an animal, although of course it is true that a man is an animal and that a brute animal is an animal, and that whatever is a man or a brute animal is an animal. By contrast, we can truly say that a man and a brute animal are two animals when we consider the integral whole consisting of two animals, namely, one man and one brute animal. In general, assuming the completeness of the division in the sense of 8.1.7. below, we can say that A and B are subjective parts of the predicable whole C if and only if whatever is an A or a B is a C, whereas A and B are integral parts of the integral whole C if and only if (whatever is an) A and (whatever is a) B taken together are the same as (a) C.

4. For Buridan, *ternarius* (triad), or *numerus ternarius* (a three-member number), is a common term denominating any collection of three things. The term *numerus* (number) is a generic term of which *ternarius* is a species, because *numerus* denominates collections of any number of things.

And since every whole is so called on account of some unity and parts are so called on account of some multitude, therefore, we call one term that is predicable of several others a 'predicable whole', and the several other [terms] of which the predicable whole is predicated we call its 'parts', especially if that one term signifies in a confused manner several things that those other terms signify separately and distinctly.

8.1.5 On the various divisions of wholes

> We say that there are several divisions of the aforementioned wholes. For sometimes the division of a whole into its parts occurs only on account of their consideration by the soul, sometimes on account of some real change in the whole itself or in its parts. For when we divide the world into heavenly and terrestrial bodies, [and the terrestrial bodies] into light and heavy bodies, or when we divide the zodiac into the twelve signs, we do not cause any change in them, but we thus divide them by means of our reason, for those that we first conceive of as one, later we conceive of as several.

The fifth part clearly presents diverse modes of dividing a whole into its parts. And the principal and properly so-called mode of division is that which comes about because of some real change in the parts or at least in some of them, and on account of this [change] a part is removed from a part in such a manner that the parts that were earlier said to be one whole in some way are no longer said to be that whole in that way. And this mode has several further specific modes. The first of these is that which takes place by separating the previously continuous parts of a continuous thing while preserving the parts, as when we break a stick in two or when we cut up a log into several parts.

The second mode is that which takes place by the separation of the form of a composite thing from its matter. And this change is the corruption of the composite thing, and of the form, if the form is material, or it is only the ceasing to be of the inherence of the form in matter without its corruption, if the form is immaterial, as in the case of the death of a man.

The third mode is the division of a mixed body into its elements. But a mixed whole is not properly an integral whole of its elements, but rather it is their *virtual* whole, since it has powers [*virtutes*] that are somehow similar to the powers of the elements. This division is called 'the resolution of a mixed body into its elements', which we call 'simple bodies'; and this division takes

place through the substantial corruption of the mixed body and the generation of the elements from it.

The fourth mode pertains to wholes none of which is said to be one in the absolute sense [*simpliciter*], but one [only] on account of some aggregation, or collection, or order, or something like these, and it comes about by means of the locomotion of the parts, on account of which the parts cease to be said to be one in this way, as when in the case of a house the roof is removed from the walls, and the walls from the foundation, and the beams and the stones from one another, or when the stones of a heap of stones are scattered, or when from an army everybody returns home.

Another mode of division of a whole into its parts is less properly called so.

It takes place only by means of the consideration of the soul, as when we call these [things] six according to one numerical concept, whereas according to several other numerical concepts we call some of them two and the rest four, or some of them three and the rest also three; for this is how we divide six into four and two or into two times three. And when we consider the whole zodiac by means of one concept, then we call it one circle, but when we next consider separately twelve equal parts of it, then we call each one of them one sign; and this consideration I call 'the division of the zodiac into twelve signs'. But to this consideration and division on the side of the thing there correspond the unity of the zodiac and the diversity of its parts one from another. [And all these are examples of the divisions of integral wholes.][5]

But we can say similar things about predicable wholes. For when we conceive of many animals by means of one concept, we call all of them 'animals', and each of them an 'animal'. But when we consider them by means of two concepts, some of them we call 'men' on account of one concept, and the others we call 'brutes' on account of another concept, and this constitutes the division of animals into men and brutes. In the same way, without any external change, we divide an animal into body and soul, or the mixed body into the four elements, the world into heavy and light bodies, and our books into treatises, chapters, and parts.

8.1.6 On predicable wholes and their parts

(1) Predicable wholes and their parts are so called in several diverse senses. Therefore, they are usually divided in several ways. One kind of

5. This sentence is added in some codices.

> predicable whole is the one that is predicated equivocally of its parts, and its division we call 'the division of an utterance into its [different] significations'. (2) Another kind of whole is predicable univocally of its parts, and examples are a genus or a species; and thus this involves either the division of a genus into its species by means of specific differences or the division of a species into its singulars. (3) Another kind is predicable of its parts denominatively, and its division can be called 'the division of a whole-in-mode into its parts', or it is reducible to a division of this kind. Now terms that can be predicated of one another denominatively are related to one another either as subject and attribute, or as several attributes [*passiones*] of the same subject, whether they are said to be *per se* or *per accidens* attributes. And thus Boethius, who calls attributes accidents, posits three kinds of division of wholes that are predicable denominatively of their parts, namely, [the division] of a subject into accidents, that of an accident into subjects, and that of an accident into accidents.[6]

(1) The sixth part contains three sections, the first of which is about the division of an equivocal term into its significations. An equivocal term is a spoken or written significative term, but not a mental term, as has been said elsewhere.[7] An equivocal spoken term is one to which there does not correspond in the mind one concept [*conceptus*] in relation to all of its significations or all of its significata, but several concepts, in accordance with its several significations. It is divided into other terms or expressions, to each one of which there corresponds one of the concepts corresponding to that equivocal term. And a division of this kind is nothing but the distinct explication of the significations of an equivocal term by means of other terms or expressions that appropriately express those diverse significations. For example, we say that the name 'dog' according to one of its significations signifies the same as 'barking animal', and according to another the same as 'celestial constellation', and according to another the same as 'marine fish'.

Some equivocal terms we call 'purely equivocal', and such a term is one that was not given a signification in relation to another [*secundum attributionem ad aliam*].[8] Others we call 'analogical', and such a term is one that has a primary

6. Boethius, *De divisione,* ed. J.-P. Migne (Paris, 1860), 877B13–C1; Boethius, *Anicii Manlii Severini Boethii De divisione liber,* ed. J. Magee (Leiden: Brill, 1998), p. 6.

7. See 3.1.2.

8. This reading comes from the Hubien text and is also given in the critical apparatus. The critical text now has: *pure aequivocum, et ille est cui non est imposita una significatio secundum aliam et aliam attributionem*—"purely equivocal, and [such a term] is one that was not given a signification in accordance with several attributions." Nevertheless, the reading of the Hubien text seems to make the point in a less cumbersome manner. See 8.3.6 n. 132.

signification and another or others that are related to this [primary signification]; and then the definitions [*rationes*] of the secondary significations always include the definition [*ratio*] of the primary signification.

(2) The second section concerns the division of a *univocal term.* And I take 'univocal' here as being distinguished both from 'equivocal' and 'denominative', which were discussed elsewhere.[9] Such terms are genera and species. In one way a genus is divided into differences, as when 'animal' is divided into 'rational' and 'irrational' as follows: 'Some animals are rational, others are irrational', or thus: 'Every animal is either rational or irrational'. In another way a genus is divided into species, for example: 'Every animal is either a man or a brute'. We say, however, that a genus is divided by means of differences into species, for with respect to the concept of the genus [*secundum rationem generis*] the division of genus into its differences is prior to its division into species, because differences are conceptually [*secundum rationem*] prior to species, since they are placed in the quidditative definitions of species, and because, having been added to the genus, they constitute the definitions of species. Species, however, are immediately divided into their singulars, and not by means of prior essential differences, for the singulars of the same species cannot be distinguished from one another except by means of accidents, or extrinsic [features], as should be seen in bk. 7 of the *Metaphysics;*[10] and for this reason, along with some other grounds, we say that singulars are not definable.

(3) The third section concerns denominative predicables, and in this section mention is made of wholes-in-mode. A whole-in-mode, as has been said elsewhere,[11] is a common term taken with respect to itself-with-some-accidental-determination. Therefore, a division of a whole-in-mode into its parts takes place, for example, when we say the following: 'Of horses some are white horses, others are black horses, and the rest are colored by intermediate colors" or if we say that every number is either an even number or an odd number. Sometimes, however, in such divisions of denominatively predicable terms, we attach the attribute to the subject without a determination and determinable.

And this is how the three modes of this division posited by Boethius come about, namely, the division of a subject into its attributes, or accidents, as here: 'of horses some are white, others are black, and the rest are colored by intermediate colors', or here: 'of numbers some are even, others are odd'; the divi-

9. See 3.1.3.

10. See J. Buridan, *Quaestiones in Aristotelis Metaphysicam: Kommentar zur Aristotelischen Metaphysik* (Paris, 1518; reprint, Frankfurt am Main: Minerva, 1964), bk. 7, q. 18.

11. See 6.4.6.

sion of an accident or attribute into its subjects, as here: 'of males some are men, others are brutes' or here: 'of heavy or light bodies some are elements, others are mixed from these'; and the division of an accident into accidents, or an attribute into attributes, as here: 'of heavy [bodies], some are dry, others are wet', or 'of wet [bodies] some are warm, others are cold'.

And such denominations and predications are reduced to the whole-in-mode and its parts. For accidents are [functioning] as parts-in-mode of their subjects, since something exists in itself not because it is white or black; rather, there is no white [thing] without there being something [that is] white, nor is there [a] black [thing] without there being something [that is] black, as stated in bk. 7 of the *Metaphysics* and also in bk. 1 of the *Posterior Analytics;*[12] for Aristotle reduces the predication of the subject of its accident, or that of an accident of an accident, to the predication of the accident of its subject, i.e., to that which is [a] prior and direct [predication].

8.1.7 On complete and incomplete divisions

> Some divisions are called 'complete' [*perfectae*], others 'incomplete' [*imperfectae*]. A division is called complete if it possesses two properties, namely, that it is exhaustive [*sufficiens*] and that it is not overlapping [*superflua*]; it is called incomplete if it fails to possess either of these two properties. The division of an integral whole into its parts is exhaustive if those parts [taken together] are the whole itself, and it is deficient if they are not that whole. The division of a predicable whole is exhaustive when it comprises such parts as can be predicated disjunctively of that whole taken universally, and if this is not so, then the division is not exhaustive. A division is said to be overlapping if some parts of the whole into which it is divided have a common share in some part of that whole, and if not, then the division is not overlapping.

The seventh part will be clarified by providing some examples. Thus, the division of the proposition 'Man is [an] animal' into subject, predicate, and copula [and the indefinite article of the predicate in English] is an exhaustive division, because these [taken together] are that proposition. But the division of the proposition 'Every man is [an] animal' into subject, predicate, and copula [and the indefinite article of the predicate in English] is not exhaustive, for from this division the part 'every' is missing, without which the other

12. Aristotle, *Metaphysics* VII.12; *Posterior Analytics* II.13.97a23 et seq.

parts are not this proposition. Thus also, the division of a quantitative whole covering only its two thirds is not exhaustive, but its division into three non-overlapping thirds is. In the same way, the division of 'animal' by means of 'rational and 'irrational' is exhaustive, for every animal is either rational or irrational, but the division of 'animal' by 'flying' and 'walking' is not exhaustive, for not every animal is either flying or walking. Furthermore, although the division of 'animal' by means of 'rational' and 'irrational' is not overlapping, it would nevertheless be so if divided by means of 'rational', 'irrational', and 'mortal', for 'mortal' coincides in some of its supposita with 'rational' as well as with 'irrational'. In a similar manner, the division of heavy and light bodies into warm and cold, and wet and dry bodies would be overlapping, for 'warm' and 'cold' coincide [in some supposita] with 'wet' and 'dry'; still, it would not be overlapping were the division into warm and cold, or alternatively into wet and dry.

Similarly, in the case of an integral whole, the division of the proposition '[A] man runs' into noun, verb, and copula would be overlapping, for the copula is implied in the verb. Also, the division of six into [groups of] three and four would be overlapping, for although both three and four are parts of six, still, there are no [groups of] three and four in six without their sharing in one unit. But the division of six into two [groups of] three, or into [groups of] two and four, not sharing [a member], would not be overlapping. Likewise, the division of a line into its half, its third, and its fourth would be overlapping, but not into its half, third, and sixth not sharing [a part]. This is, therefore, what the authors intend by saying that the dividing members of a good division should cover the whole range of what is divided, with respect to exhaustiveness, and that the members should not coincide, where overlapping is concerned.

First Doubt

But then a serious doubt emerges in connection with what has been said about the divisions of certain genera into their species, in that it obviously appears that the members in question coincide. Take for example the division of 'quantity' into 'continuous quantity' and 'discrete quantity'. How does this come about? For every continuous quantity is a number (for it is two, as it is its two halves), but every number is said to be a discrete quantity. Again, how is magnitude divided into body, surface, and line, given that every line and surface is a body? And how, in bk. 2 of the *Ethics*,[13] is [what is] good divided into

13. Aristotle, *Nicomachean Ethics* II.3.1104b30–31.

the noble [*honestum*], the pleasant [*delectabile*], and the advantageous [*utile*], given that everything that is absolutely advantageous or pleasant is noble, and also everything advantageous is pleasant, and conversely? And the same goes for several other divisions.

I reply, as far as our present topic is concerned, that for some terms to be the diverse species into which some genus is directly divided there is no necessity that they not supposit for the same things, but it is sufficient in many cases that they be subordinated to diverse concepts [*rationes*] contained under the generic concept, so that none of them is contained under any of the others. Hence, it is said in bk. 5 of the *Metaphysics* that things are said to be *one in species* that have the same concept [*ratio*], and those are said to be *diverse in species* whose [specific] concepts [*rationes*] are diverse.[14] For the terms 'sweet' and 'white' are diverse in species, although they supposit for the same thing, for example, for milk.

In such cases, therefore, one should not present a division in this manner, namely, "some quantities are continuous, others are discrete," or "of quantities, some are lines, some are surfaces, and others are bodies" or "of good things, some are pleasant, others are advantageous, and others are noble," but rather in the following way: "of concepts on account of which some things are said to be quantities, some are those on account of which these things are said to be continuous and others are those on account of which these things are said to be discrete," and "of concepts on account of which some things are said to be magnitudes, some are those on account of which these things are called a body, some are those on account of which these things are said to be a line, and some are those on account of which these things are said to be a surface," and "of concepts on account of which some things are called good, some are those on account of which these things are called advantageous, some are those on account of which these things are called pleasant, and some are those on account of which these things are called noble," and so on for the other cases. For in divisions of this kind, the separations without coincidence take place not by setting apart *the things from the things* for which the terms supposit, but by setting apart *the concepts from the concepts* on account of which the diverse names supposit for the same things.

And, if we want to digress a little, it is obvious that not every genus is superior to any of its species with respect to predication, taking the terms in personal supposition. For every quantity is a number and every number is a quantity, and every magnitude is a body and every body is a magnitude. It is true, however, that in the case of substantial and [other] nonconnotative terms the genus is superior to its species in predication, and it supposits for

14. Aristotle, *Metaphysics* V.6.1016a32–34.

more things than one of its species, and no species or differences among the substantial terms that immediately divide some genus coincide in supposing for the same thing or things. For neither is every animal a man, nor is every animal a brute, nor is a brute (or a horse) a man, just as neither is every color a whiteness, nor is every color a blackness or a redness, nor is some whiteness a blackness or a redness, nor conversely. But this does not have to be the case in all denominative genera and species; indeed every line and surface is a body, and every magnitude is a number.

Second Doubt

But then the question immediately arises why in these cases the genus is a whole with respect to the species rather than conversely, and in what way the species is a subjective part of the genus.

I reply that although there may not be superiority and subjection here in respect of supposing for more or for fewer things, there is, however, superiority and nonconvertibility as to being understood by means of this or that concept. For example, the name 'quantity', whatever it supposits for, connotes divisibility and measurability. I say 'divisibility' for it is stated in the description of 'quantity' in bk. 5 of the *Metaphysics* that "something is said to be of some quantity which is divisible,"[15] and I say 'measurability' for it is stated in the same place that "a quantity, therefore, is called a multitude, if it is countable, and it is called a magnitude, if it is measurable."[16] The general concept [*ratio*] of quantity, therefore, is that of a plurality of measurable things, the concept of continuous quantity is that of a plurality of things measurable as to how big they are with respect to their extension, and the concept of discrete quantity is that of a plurality of things measurable as to how many they are with respect to their multitude.

The superiority and inconvertibility, therefore, consist in the fact that whatever items are understood to be a plurality of things measurable as to how big they are with respect to their extension are understood to be a plurality of measurable things, but not conversely; in the same way, whatever items are understood to be a plurality of things measurable as to how many they are with respect to their multitude are understood to be a plurality of measurable

15. *Quantum vero dicitur quod est divisibile in ea quae insunt, quorum utrumque aut singulum, unum aliquid, et hoc aliquid, aptum natum est esse:* "Something is said to be of some quantity that is divisible into two or more constituents of which each is apt to be a unit and some this." Ibid., V.13.1020a8–9.

16. Ibid., V.13.1020a10.

things, but not conversely. The case is similar with magnitude and its species. For something is called a magnitude insofar as it is measurable as to how big it is extensively, and it is called a line insofar as it is measurable as to how big it is extensively along one dimension, disregarding its extension along the other dimensions, and it is called a surface with respect to the other dimension laid across the first, not considering the third dimension, and it is called a body considering also the third dimension.

And then it is clear that the genus is superior and inconvertible with respect to each one of those species. For everything that is understood to be measurable as to how big it is extensively along one dimension without considering the other dimensions is understood to be measurable as to how big it is extensively, but not conversely; and the case is similar with the concepts of 'surface' and 'body'. This is, therefore, what Aristotle meant in bk. 5 of the *Metaphysics* when he said: "a magnitude continuous along one [dimension] is length," i.e., a line, "along two [dimensions] is width," i.e., a surface, "and along three [dimensions] is depth," i.e., a body; "and the plurality of these is a number." And these should be demonstrated by consulting bk. 5 of the *Metaphysics* and bk. 6 of the *Physics*.[17]

Therefore, I now return to the discussion of the other differences between the diverse modes of division listed above. The division of genus into species differs from the division of species into individuals in that it is impossible to give an exhaustive division of species into individuals because of the infinity of individuals. Therefore, he who descends from the most general genera towards the most specific species by divisions is recommended by Plato to stop at the most specific species, according to Porphyry.[18] But it is possible to provide an exhaustive division of a genus into its species, although not of all genera, for some genera have infinite species, as do the genera of figures and numbers.

The division of genus into species differs from the division of subject into accidents or conversely, or from that of an accident into accidents, first, because though the species divide a genus, the genus does not divide any of its species. But in the case of accidents either of the two can divide the other, for just as every human is either male or female, so is every male either human or brute; and just as everything warm is dry or wet, so is everything wet either warm or cold. Second, they differ because if the division of the genus into species is exhaustive, then the species taken disjunctively are convertible with

17. Ibid., V.13.1020a11–13; J. Buridan, *Quaestiones super octo Physicorum libros Aristotelis: Kommentar zur Aristotelischen Physik* (Paris, 1509; reprint, Frankfurt am Main: Minerva, 1964), bk. 6, q. 3, following the reading of some codices.

18. Porphyry, *Isagoge* 6.13–15, pp. 129–11.

the genus, as, for example, every animal is either human or brute, and everything that is either human or brute is an animal. But this is not so with accidents; for although every human is either male or female, it is not the case that, conversely, every male or female is human, and although everything sweet is warm or cold, yet not everything warm or cold is sweet.

8.1.8 On divisions in a less proper sense

(1) There are also other modes of division, less properly so called. One is the division of a predicable term by means of another term taken in its finite and in its infinite form. For example, every animal is a man or a non-man, or rational or non-rational, or white or non-white. (2) Another mode is exemplified when an expression that is the same in matter is said to be composite or divided according as it is different in form. (3) Yet another mode is that according to which we call a disjunctive proposition a 'division', as when we say: 'Either some man runs or no man runs'; such a proposition is manifest on account of the exhaustive division it exhibits.

In the eighth part three further modes are added to the modes of division discussed above. (1) And the first of them is reducible to the modes clarified above. For if a term that is dividing and a finite term that is divided are related to each other by univocal predication, then one of them will be a genus and the other its species or difference, or one will be a species and the other its individual. The [corresponding] infinite term, however, will be taken for the other single species or the other several species, for the other difference or differences, or for the other individual or individuals.

This happens sometimes because some species or difference does not have a positive name imposed on it, as when we say that of sounds some are utterances and others are non-utterances. And that a name is not imposed sometimes occurs on account of our not knowing the species or difference. It is because of this mode of division that sometimes a species is defined by means of its genus and the negation of another species, or several other species, or their differences, as when Porphyry says that an accident is a predicable that is neither a genus, nor a species, nor a difference, nor a property, or if we said that a brute is a nonrational animal.[19] Oftentimes in such divisions we use a privative term in place of an infinite term, as when we say: 'of substances

19. Ibid., 13.4–6, pp. 2013–15.

some are corporeal, others incorporeal' and 'of corporeal substances some are animate, others inanimate'.

If, however, the term that is dividing is related to the term divided by denominative predication, then this is reduced to the division of a subject into its accidents or conversely, or of accident into accidents, as when we say: 'of substances, some are mobile, others non-mobile', or 'immobile', or 'of bodies, some are colored, others non-colored', or 'of colored bodies, some are colored-by-whiteness and others are non-colored-by-whiteness' or 'of colored ones, some are sonorous, others non-sonorous'.

And we should note that this kind of division is very common. For by means of this division every term suppositing for many things can be divided by a term that supposits for one or several of those things, but not for all of them, as for example, 'some men are white, others are non-white', and 'of white [things] some are men, some are non-men', or 'some beings are horses, others are non-horses', or 'every being is either Socrates or non-Socrates'.

And all such divisions are exhaustive and nonoverlapping. I say 'exhaustive' for the reason that of every term that supposits for something or some things (even taken universally, if it is a common term) every other term taken in a disjunction in its finite and in its infinite form is truly predicated. For example: 'every being is either white or non-white', 'a house or a non-house', indeed, 'a chimera or a non-chimera'. And I added the qualification 'nonoverlapping' because a term in its finite form and the same term in its infinite form never supposit for the same thing; for no house is a non-house, no white [thing] is [a] non-white [thing], etc.

We should also note that this mode of division is so general that it can be used to test whether any other division of a predicable is exhaustive. For if any member of the division is truly and universally predicated of the infinite form of other member, then the division is exhaustive, and if not, then it is not exhaustive. For example, the following is an exhaustive division: 'Some animals are rational, others irrational', for every nonrational animal is irrational and also every nonirrational animal is rational; but the following is not exhaustive: 'Some animals fly, some walk', for not every nonflying animal walks, nor does every nonwalking animal fly.

And from this it is clear how we should understand the properties usually assigned to good divisions, namely, that every good division [*bona divisio*] should be given in terms of opposites, and it should be twofold or reducible to a twofold division. It has to be given in terms of opposites in this way, for of either member of a good division the opposite of the other member should be truly predicated. And I talk about "opposites" in the sense of the opposition of finite and infinite terms. For example, if the division of 'animal' into 'man' and 'brute' is good, then it is necessary that a man be non-brute and a

brute be non-man. But if a division has three or four members, then it is reducible to two members; for taking one member, its opposite is truly predicable of any of the others. For example, if I say that every quantity is either greater than, smaller than, or equal to every quantity in its species, this is so because what is greater, as well as what is smaller, is non-equal; and then we have a division with two members thus: either equal or non-equal, and if non-equal, then either greater or smaller. Similarly, of triangles some are isosceles, others equilateral, and others scalene, for every triangle is either isosceles or non-isosceles, and if non-isosceles, then either equilateral or scalene. Let this much suffice concerning the first mode of the divisions presented in this part.

(2) As regards the second mode, it suffices what was said about it in treatise 7, where we discussed the fallacy of composition and division.[20]

(3) But where the third mode is concerned, we have to say that it is not a division, properly speaking. For if I say that God is or God is not, there is nothing that is divided into God's being and God's not being, for nothing is God's not being. But such a proposition is called sometimes a 'division' on the basis of similarity. For just as when there is a good division of a predicable term, then it is necessary that of any suppositum of the term divided some of the dividing terms should be truly affirmed, but not both of them, except in a disjunction, so it is necessary that one member of a disjunctive proposition be true, but not both members.

Also, if someone were to call a categorical proposition with a disjunctive predicate a 'division', this will be on account of similarity, but not properly speaking, just as has been said about the disjunctive proposition. For example, if I say that every man is a donkey or a non-donkey, or that every being is a chimera or a non-chimera, then nothing is divided here properly speaking, for the term 'donkey' is not a subjectible part of 'man', nor is 'chimera' of 'being'. But the subject would be truly predicable of both predicates figuring in the disjunction if the first proposition could imply a division, as when I say: 'Every animal is white or non-white'; for this can be analyzed into the following divisive[21] proposition: 'Of animals some are white, others non-white'.

Let, then, these suffice as our brief remarks concerning divisions.

20. See 7.3.5.

21. The Hubien text had 'divisive' *(divisivam)* in place of 'disjunctive' *(disiunctivam)* here, which, given the example, would seem to be a better reading. In the critical apparatus we have 'divided' *(divisam)* in some codices.

Second subject matter: On definitions

8.2 Introduction

(1) Next we should discuss definitions. There are eight common properties belonging to everything defined [*definitum*][22] and also to every definition. And the first property is that 'definition' and 'definitum' are predicated correlatively; for every definitum is the definitum of a definition and every definition is the definition of a definitum. (2) The second property is that the definitum and the definition are convertible with one another; for example, every man is a rational animal and every rational animal is a man. (3) The third property is that every definition explicitly makes the definitum known. (4) The fourth is that every definition is an expression, and every definitum is an incomplex term, or at least an expression of lesser complexity than its definition. (5) The fifth property is that no singular [term] is a definitum or a definition. (6) The sixth is that no proposition is a definitum or a definition. (7) The seventh is that no definition should be expressed parabolically or figuratively. (8) The eighth is that no definition should be redundant or deficient.

The second chapter will treat of definitions. And it will have seven parts, the first of which lists the common[23] properties of definita and definitions. The second distinguishes diverse modes of definition, the third deals with nominal definitions [*definitio dicens quid nominis*], the fourth is about quidditative definitions [*definitio quidditativa*], the fifth is about causal definitions, the sixth about descriptive definitions, which are also called 'descriptions', and the seventh about the combination of these definitions.

8.2.1 The eight properties of the definitum and of the definition

The first part contains eight sections, namely, eight common properties of definita and definitions, the first of which is quite clear.

22. For want of a corresponding simple word in English, henceforth I will use the Latin word *definitum* (pl.: *definita*) to refer to the term that is defined.

23. Reading *communes* with Hubien for the critical text's *omnes* (all), which is supported by the opening sentence of the next paragraph.

(2) The second states that every definition is predicable of its definitum truly, affirmatively, and universally. But this property should be modified with respect to nominal definitions.

(3) The third property is to be assumed on the basis of what the name ['definition'] means; for a definition is sought for no other reason but in order that one can explicitly know what it is that the definitum supposits for, or what thing or things the defined term signifies and what thing or things it connotes.

(4) Hence follows the fourth property, for the definition cannot thus explicitly explain the definitum unless it is an expression and the definitum is an incomplex term, and (if both of them are expressions) unless the definition contains more words [than the definitum]. That the definitum sometimes is an expression Aristotle remarks in bk. 1 of the *Topics,* speaking about definitions, when he says: "An expression is provided for a name, or an expression for an expression."[24] And this happens when we have an expression that contains some definable term, as when we take an expression consisting of the terms A and B, call it G, and let A be definable, then in another expression we put the definition of A along with B, and let us call this second expression H; then I say that H is the definition of G. For example, let the expression G be 'rational animal' and let us take the definition of 'animal' along with 'rational', and then the expression H will be 'rational, sensitive, animate substance'. And this expression will be the definition of the expression 'rational animal'; for it is predicating the definition of the definitum if we say: 'A rational animal is a rational, sensitive, animate substance'. And in the same way, the definition of 'white animal' would be the expression 'white, sensitive, animate substance'.

From this it is clear that if expression H is the definition of expression G, then this is not so because of the whole expression, but only because part A of expression G is defined by part B of expression H. For as far as 'white' or 'rational' is concerned there is no difference between the defining expression and the defined one; therefore, it seems that *per se* and primarily an expression does not have a definition, except on account of an incomplex term [it contains]. This, therefore, is the correct understanding of the celebrated claim that only an incomplex [term] has a definition. Likewise, if in a complex expression consisting of two terms both terms are definable, then the expression consisting of the definitions of both of them will be the definition of that expression. For example, if the definition of 'snub-nosed' is 'having a curved nose' and the definition of 'animal' is 'animated sensitive substance', then the definition of 'snub-nosed animal' will be 'animated sensitive substance having a curved nose'; but again, this would be [the definition of the first expression] not *per se*

24. Aristotle, *Topics* I.5.102a1–2.

and primarily but because of the fact that its one part would be the definition of the one term and the other would be that of the other.

(5) The fifth property is more doubtful; its demonstration belongs to bk. 7 of the *Metaphysics,* and Aristotle provides some reasons there that I briefly touch on here.[25] One reason is that the things signified by the singular terms of the same species cannot be recognized definitively, except by means of [features] external to those singulars, and yet those [singular] terms would still signify to us what they signified before, even after eliminating these [features]; therefore, we should put in the definition of a singular external [features] that distinguish it from any other but that are such that their removal would not remove the singular term or its signification [from the singular thing, which is not possible].[26]

Another reason is that things cannot be cognized as singulars unless they are cognized as something in the prospect of the cognizer. Therefore, if I did not perceive Socrates, you cannot tell me what I should understand by 'Socrates', except by using common terms, the aggregate of which can just as well apply to something else as to Socrates. So, should another thing be created similar to Socrates in all of its external features [*circumstantiis*], this [aggregate] would no longer be the definition of 'Socrates', for it would not be proper to it, nor convertible with it.

Another reason is that if you impose several names simultaneously or successively on the same thing, saying that this[27] should be called by the proper name 'Socrates', and that it should also be called by the proper name 'B' or 'C', or 'D', then those names will be synonymous, and synonymous names are not defined by one another. And if some singular name is not placed in the defi-

25. Aristotle, *Metaphysics* VII.4.1029b23–5.1031a14; 10; 15.1040b4.

26. The argument as stated here is somewhat obscure, but I think its point can be reconstructed as follows. Since singulars of the same species are entirely similar in their specific essential features, we can distinguish them only in terms of their extrinsic individual features. (See p. 622 above.) Therefore, we could have a distinctive definition of singular terms signifying singular things of the same species only by including such extrinsic features. But such extrinsic features, being extrinsic, can always be removed, leaving the identity of the singulars unaffected. So the same singular terms will always signify the same singular things whether those extrinsic features still belong to them or not. But the putative definition of a singular term, which signifies precisely these external features, would be removed from (i.e., will cease to apply to) the singular thing after the removal of these features. Hence it could be a correct definition only if it signified extrinsic features, the removal of which from the thing would not remove what this definition signifies, but this is impossible. See Buridan, *Quaestiones in Aristotelis Metaphysicam,* bk. 7, q. 18.

27. Here I followed the reading of the Hubien text on the basis of the critical apparatus.

nition of a singular, then the definition will only be an aggregate of common names, which can apply to another thing, as has been said.

Another reason is that when a thing apprehended as singular is no longer perceived, we do not know whether its definition [still] says what it is [*quid est*], which should presuppose that the thing is [*quia est*].[28] But this argument does not apply to nominal definitions, for those need not presuppose that the thing exists. And these arguments involve profound difficulties that need to be clarified in higher philosophy.[29]

(6) The sixth property seems to hold because the definition has to be truly predicated of the definitum, if both are taken significatively; but a proposition taken significatively is neither a subject nor a predicate. But this argument does not apply to nominal definitions, for, taken significatively, a nominal definition does not have to be affirmatively predicated of the definitum. Therefore, from this it is not obvious that this property should apply to all nominal definitions, but this issue will be discussed later.[30]

Again, [consider] an accusative-with-infinitive expression similar to a proposition in that it contains a noun and a verb, or something like a subject, predicate, and copula, as when I say 'for a man to run', or 'for a man to be white': such an expression is perfectly definable, not *per se* and primarily but on account of a term or several terms. For if we say: 'For a man to run is for a rational animal to run', then this is a predication of the definition of the definitum. But this does not invalidate the property [now in question], for properly speaking such an expression is not a proposition, although sometimes, taken materially, it supposits for a proposition, as when I say: 'For a man to be a

28. In the critical text now we have here: "Alia ratio est quia cum singulariter apprehensum recedit a sensu, nescimus utrum eius definitio dicens 'quid est' debet supponere 'quia est'"—"Another reason is that when a thing apprehended as a singular is no longer perceived, we do not know whether its definition saying what it is [i.e., its quidditative definition] should presuppose that it is." A quidditative definition, however, as opposed to a nominal definition, always has to presuppose that the thing is, and this we know whether we perceive the thing or not. (See 8.2.4 [4] below.) Therefore, my conjectural emendation of the reading of the critical text on the basis of the apparatus would be the following: "Alia ratio est quia cum singulariter apprehensum recedit a sensu, nescimus utrum est definitio dicens 'quid est', quod debet supponere 'quia est'." That is to say, when we no longer perceive the singular thing, we do not know whether it still exists, and so we cannot know whether its quidditative definition, which presupposes its existence, is still applicable. But this consideration does not concern nominal definitions, which do not presuppose the thing's existence. (See 8.2.3 [4] below.)

29. See Buridan, *Quaestiones in Aristotelis Metaphysicam,* bk. 7, q. 18.

30. See 8.2.3 (4).

donkey is false' [that is to say, 'That a man is a donkey is false' or 'It is false that a man is a donkey'].

(7) The seventh property is stated by Aristotle in bk. 6 of the *Topics*,[31] and he proves it as follows: a definition is sought only for the sake of the explicit manifestation of the definitum; therefore, it should not be obscure, but it should be as clear as possible; but every figurative or parabolic locution has obscurity.

(8) The eighth property is obvious, for redundancy as well as deficiency is said to be a defect in every case.

8.2.2 On the four modes of definition

Some definitions are nominal definitions, some are quidditative, some are causal, and others are descriptive.

The second part enumerates four modes of definition, which are to be clarified one by one in the subsequent parts. Now this division of definitions is to be understood taking 'definition' broadly. But if we wanted to take the name 'definition' strictly, then, since a definition should indicate what something is, only a quidditative definition would be called a 'definition'; and in this way we say that only those [things] have a definition that have a quidditative definition, even though they may have several other sorts of definitions as well.

8.2.3 On nominal definition

(1) A nominal definition [*diffinitio explicans quid nominis*] is an expression convertibly explaining what thing or things the definitum signifies or connotes, and properly speaking it is called 'interpretation'. (2) It pertains to incomplex spoken terms to which there correspond not simple concepts in the mind but complex ones, whether these terms supposit for some thing or things or do not so supposit. (3) It also pertains to categorical propositions to which there correspond not categorical propositions in the mind but hypothetical, conjunctive propositions. (4) And for this

31. Aristotle, *Topics* VI.2.140a6–17.

reason it is not necessary that they be predicable of their definita taken significatively, but only in material supposition, and even then not with the mediation of the copula 'is' but with the mediation of the verb 'signifies'.

The third part, which is about nominal definition, has four sections. The first describes the nominal definition, adding also what it is called properly speaking; for here I take 'interpretation' for the explicit analysis [*expositio*] of the signification of a word or expression that is being interpreted. And so when I say 'nominal definition' here I do not take the word 'nominal' for the part of speech that Donatus distinguishes from pronoun, verb, etc.,[32] but broadly for any significative utterance, whether complex or incomplex, that needs explicit analysis. And you may check what I said about the four modes of definition in the treatise on dialectical loci, where I discussed the locus from substance.[33]

(2) The second section shows what sorts of terms have such definitions. And as a basis for this point we should realize that spoken words are imposed to signify our concepts in the mind,[34] and we[35] signify the conceived things by the mediation of the concepts. But some of our concepts are simple, and some are complex, consisting of several simple ones, as has been observed elsewhere.[36] If, therefore, a word is imposed to signify a simple, or incomplex, concept, then such a word is not interpretable, but if its signification is unknown to someone, then it can be explained to him by another, synonymous word, as when a [French] child is taught Latin by means of the French language; sometimes this is taught by pointing at the thing signified, as when a mother teaches an infant her language, and sometimes it is taught by means of a description of the word, or by a quidditative definition.

But if a word has been imposed to signify a complex concept consisting of several simple concepts, then it needs an interpretation by means of several words that signify separately the simple concepts that make up the complex one. This is how 'philosopher' is interpreted as 'lover of wisdom' (for 'philosophos' in Greek comes from 'philos', which is 'love', and from 'sophos', which is 'wisdom', thus yielding, as it were, 'lover of wisdom'), and so the word 'philosopher' should signify to us nothing more or other than the expression 'lover of wisdom', and conversely.

We should also note that sometimes we impose a simple spoken word to

32. See Donatus, *Ars Grammatica (De Partibus Orationis Ars Minor),* in H. Keil, *Gramatici Latini* (Leipzig: Teubner, 1864), p. 355.

33. See 6.3.1–2.

34. Or, according to another reading, *immediate,* i.e., 'immediately'.

35. Or, according to another reading, 'they'.

36. See 4.2.4.

signify a complex concept consisting of several others, as we are allowed to do by convention [*ad placitum*], and is often useful for the sake of brevity. And a complex concept consisting of a determination and a determinable sometimes supposits for something and sometimes supposits for nothing, as was said elsewhere,[37] as when, for example, 'white animal' supposits for something, or 'non-white animal' does so; but 'neighing man', like 'non-neighing horse', supposits for nothing. If, therefore, I want to signify the complex concept that is signified in a complex manner by the spoken expression 'white animal' by means of an incomplex word, for example, by means of the word 'A', and similarly, [if] I want to signify the concept of 'neighing man' by means of the word 'B', then the word 'A' supposits for something, just as 'white animal' does, whereas the word 'B' does not supposit for anything, as neither does 'neighing man'. But both words have a nominal definition, for the expression 'white animal' is the definition of the word 'A', and the expression 'neighing man' is that of the term 'B'.

(3) The third section states that a nominal definition, or interpretation, can also be suitably applied to categorical propositions. For it is clear that by means of some syncategoremata added to some categorical propositions or implied in some of their terms, we designate conjunctive mental propositions. Those syncategoremata were invented and imposed for the sake of brevity, since when I say: 'Only man is risible', this signifies the same as the following conjunction: 'Man is risible, and nothing other than man is risible', and so this conjunction is an interpretation or nominal definition of the proposition 'Only man is risible'. In fact, even a single proposition, whether categorical or hypothetical, can be a nominal definition of a simple word. For example, if someone wanted to impose the utterance 'D' to signify precisely the concept signified by the proposition 'A man runs', then the spoken proposition 'A man runs' would be the interpretation of the word 'D'. In the same way, a barrel hoop hanging in front of a tavern is a sign imposed conventionally to signify, and its interpretation is: 'Wine is sold in this house'.[38]

(4) The fourth section makes explicit the way in which the interpretation is predicated of what is interpreted, and this section is obvious for two reasons. First, it has been said that one proposition can be the interpretation of another proposition, or even of another word, but a proposition taken significatively cannot be the subject or the predicate of a proposition. Second, sometimes the term interpreted does not supposit for anything, and neither does its interpretation, as for example the term 'vacuum' and the term 'chimera' supposit

37. See 4.6.6; *Sophismata,* chap. 1, Fourth sophism; J. Buridan, *Quaestiones longae super Perihermeneias,* ed. R. van der Lecq (Nijmegen: Ingenium, 1983), I, 2, pp. 7–14.

38. See *Sophismata,* n. 142.

for nothing, and, consequently, their interpretations do not supposit for anything either, these being the expression 'place not filled with body' and the expression 'an animal composed from members from which it is impossible for an animal to be composed'; but an affirmative categorical proposition is false if its subject or predicate supposits for nothing, whence this proposition is false: 'vacuum is a place not filled with body', and so is this: 'A chimera is an animal composed from members from which it is impossible for an animal to be composed', even though nominal definitions are here predicated of their definita.

If, however, the interpreted term supposited for something, then the interpretation would truly and universally be predicated of the interpreted term, and conversely. But loosely speaking, the predication of the interpretation of the interpreted term is true and convertible, for example, in this way: "The term 'vacuum' signifies and connotes everything that the expression 'vacuum is a place not filled with body' does, and conversely"; and the same goes for 'chimera' and its interpretation. It is similarly true that the proposition 'Every man except Socrates runs' signifies or connotes everything that is signified or connoted by the proposition 'Socrates is a man, and does not run, and every man other than Socrates runs', and conversely.

Therefore, we have to note here that the name 'chimera' does not signify a chimera, nor is vacuum signified by the name 'vacuum', if it is impossible for there to be a vacuum, as Aristotle seemed to believe.[39] Rather, the name 'vacuum' signifies every place and every body, just as the expression 'place not filled with body' does; and the case is similar with 'chimera' and animals and their parts. And these points have been more fully discussed elsewhere.[40]

8.2.4 On quidditative definition

(1) A quidditative definition is an expression indicating precisely what a thing is [*quid est esse rei*] by means of essential predicates. (2) These are the genus of the definitum and the essential difference or differences, [which are added] until the whole definition is convertible with the definitum. (3) This definition responds precisely, most properly, and truly to the question 'What is it?' (4) And it presupposes the existence of the

39. See Aristotle, *Physics* IV.7.214a16–9, 217b28.

40. See 4.6.6; *Sophismata,* chap. 1, Fourth sophism; Buridan, *Quaestiones longae super Perihermeneias,* I, 2, pp. 7–14.

thing, if one has to reply to the question 'What is it?' (5) Connotative terms do not have such definitions, except by extending the name 'quidditative definition'; only substantial terms have them, or perhaps others, if there happened to be other nonconnotative terms. (6) But such a definition does not contain any connotative terms. (7) And it may signify many more things than the definitum does.

(1) The fourth part is about quidditative definitions. It contains seven sections. The first is a description of quidditative definitions, in which 'expression' is given as the genus, to distinguish it from the term defined or from any other incomplex term, for nothing like this can be a definition. 'Indicating' is posited here because this is common to all modes of definitions, namely, to indicate the definitum, i.e., to make it known, and thus it is given to distinguish this kind of definition from any expression that does not make the definitum known. And 'what the thing is' is posited here to distinguish it from the nominal definition, for that does not express what the thing is, but what the name signifies. And by saying 'the thing' I can understand the thing for which the definitum supposits. For if I define the term 'man', the definition should indicate what kind of thing man is; for this is what I indicate when I say that man is a rational animal. But 'precisely' is added to indicate convertibility, for the definition would be deficient if the definition remained broader than the definitum, for example, if I defined animal as being an animated substance; but it would be redundant if the definitum were broader, for example, if it were said that an animal is a rational, sensitive, animate substance. Neither of these would be a definition of animal. And 'precisely' is also added to distinguish this kind of definition from a causal definition, which indicates not only what the thing is [*quid est res*] but also that on account of which it is [*propter quid ipsa est*]. And 'by means of essential predicates' is added to distinguish this sort of definition from a description, which provides denominative predicates of the term defined.

(2) The second section indicates which are the essential predicates that have to be placed into a quidditative definition. First, one has to take the genus of the definitum, and second, a difference has to be added to that genus—and this must not be an accidental one, i.e., one that connotes some extrinsic disposition, but rather an essential one that applies to that definitum—and that difference has to be taken from a primary and immediate division of the genus. And if the complex of that genus and that difference is convertible with the definitum, then it will be its definition; but if not, then that complex needs to be subdivided, adding another difference, [and so on] until the complex expression consisting of the genus and the differences is convertible with the term to be defined. For this is how we should understand what Porphyry

says,[41] namely, that a species is composed of genus and difference, although this is strictly speaking not true, but it is true in the sense that the species, i.e., the definition of the species, is composed of genus and difference.

It is true, however, that sometimes, because we do not know the essential difference, or because there is no [essential or causal][42] name imposed on it, we use in its place in the definition an infinite term or the privative opposite of another difference of that genus that is known to us, as I said earlier. Sometimes we even use some circumlocution or some other property. But the resulting propositions fall outside the range of quidditative definitions and instead satisfy the less strict conditions appropriate to descriptions.

The other sections specify certain properties of quidditative definitions.

(3) Thus the third section states the property that among the diverse modes of definition only a quidditative definition is predicated strictly and precisely in reply to the question 'What is it?' [*in quid*]. For when we ask with respect to the definitum taken significatively what it is, then the nominal definition is not a reply, for it is not predicated of the definitum taken in this way, except accidentally, but it is predicated of it when it is taken materially, although in that case it does not indicate what [any thing signified by the definitum] is but rather what thing or things the definitum signifies, as has been said. A causal definition, on the other hand, does not precisely indicate what the thing is [*quid est*] but also [indicates] that on account of which it is [*propter quid est*], i.e., that from which it is [*ex quo*], that by which it is [*a quo*], that on account of which it is [*per quid*], or that for the sake of which it is [*gratia cuius*].[43] Also, a description, since it comprises denominative predicates, or ones that connote extraneous or accidental dispositions, does not signify precisely what the thing is but also [signifies] what it is like, how much it is, how it is, where, when, etc.

But a quidditative definition signifies precisely what the thing is. And this is clear first of all with respect to the genus. For if I say that a man is an animal, I say what a man is, for he is an animal, and I say nothing more about a man, such as what he is like, how big he is, etc. Indeed, excluding all extrinsic features or accidents, retaining only that he is a man, he still remains an animal, if 'animal' is truly the genus of man.

Further, it is true that *difference* is predicated in response to the question 'Of what kind is it?' [*in quale*]. For when it has been said that man is an animal,

41. Porphyry, *Isagoge* 18.15–25, p. 27^{15}–28^{3}.

42. This phrase is omitted in some codices.

43. Clearly, *propter quid* here is a general indication of the relation of causality, whereas the other four phrases correspond to the four kinds of Aristotelian causes, namely, to the material, formal, efficient, and final causes, respectively.

and it is asked what kind of animal man is, then we respond that man is a *rational* animal. But by replying in this way we do not intend to attribute to man anything accidental or extraneous, but only to restrict the generality of the genus to the species. So, excluding everything that does not belong to the quiddity and essence of man, retaining only what a man is, a man is still a rational animal; and therefore we say that 'rational' is not predicated *in quale accidentale,*[44] as 'white' is, but *in quale essentiale,*[45] without some extraneous connotation. For this reason the difference, added to the genus, constitutes this quidditative and substantial predicate, namely, the species. Therefore, the aggregate of difference and genus signifies nothing but the essence for which the species supposits, whence the whole together, which is the definition itself, is predicated of the species in response to the question 'What is it?' [*in quid*]; for 'rational animal' signifies nothing other than what a man is.

(4) The fourth section adds the further property that a quidditative definition presupposes the existence of the thing, that is to say, there is no quidditative definition, nor should one be asked for, except of a definitum supposing for something, so that the verb 'is' is truly predicated of that definitum, when it is taken significatively; and this also has to be known before one can ask what the thing is. For of that which is nothing, you cannot truly say what it is, just as it makes no sense to ask of what quality [*quale*] A is, unless it is presupposed to be of some quality [*aliquale*], or of what quantity [*quantum*] it is, unless it is presupposed to be of some quantity [*aliquantum*], or whose [*cuius*] father or master somebody is, unless he is presupposed to be someone's [*alicuius*][46] father or master, etc. Therefore, it makes no sense to ask what thing [*quid*] A is, unless it is presupposed to be something [*aliquid*].

If, therefore, one doubts whether A is, it is necessary to inquire about this first; but once it has been found to exist, then indeed it is to be asked what it is. For this is how Aristotle puts it, in bk. 1 of the *Posterior Analytics:* "Once we know whether the thing is, we ask what it is,"[47] and later he adds: "To ask what it is, not knowing whether it is, is to ask nothing."[48] Therefore, with respect to this property a quidditative definition differs from a nominal definition, as is clear from what has been said. And so it is not necessary for knowing or seeking the nominal definition to know beforehand that the definitum

44. That is, as a quality belonging in the accidental category of *quale* (quality).

45. That is, as an essential quality, an absolute, essential predicate, which, however, is similar to terms in the category of quality in that it replies to the same question as those do, but without connoting any extrinsic disposition.

46. This is missing in some codices.

47. Aristotle, *Posterior Analytics* II.1.89b34–35.

48. Ibid., II.8.93a26–27.

[i.e., what the term defined signifies] exists; rather, in every reasoning, be it dialectical or demonstrative, it is necessary to know beforehand the nominal definition[49] of each term used in that reasoning, as Aristotle rightly states in bk. 1 the *Posterior Analytics*.[50]

(5) The fifth section adds this other property, namely, that connotative terms, such as concrete accidental terms and several abstract ones, do not have a quidditative definition properly so called, although they may be allowed to have one, taking 'quidditative definition' in a broader sense. The first of these claims is justified as follows. A connotative term supposits either for nothing or for something. If it supposits for nothing, then one cannot say, taking it significatively, what it is, as for example, what a chimera is, for it is nothing; therefore, a quidditative definition does not pertain to it, as has been said. If, however, it supposits for something, as does 'white [thing]' [*album*], then it appellates something else, or some other disposition, in relation to [*circa*] that for which it supposits, such as whiteness [in this case].

Now let us assume that nothing is white except a stone. Then a white [thing] is a stone, and it is nothing other than a stone, nor is it a whiteness, or an aggregate of a stone and a whiteness, if we express ourselves properly, but it is only that to which a whiteness belongs [*inest*], namely, the stone, just as a wealthy man is not his wealth, nor the aggregate of a man and wealth, but only a man to whom this wealth belongs [*adiacent divitiae*]. But when I ask precisely, 'What is the white thing [*quid album est*]?', I do not require that the reply indicate what a whiteness is, or what an aggregate of a stone and a whiteness is, nor do I ask on account of what disposition a white thing is white; I

49. In this context, the *quid nominis* obviously does not need to be an explicitly stated nominal definition but rather just the meaning of the term, which, however, one should be able to explicate on request if one claims to have a competent understanding of the term in question.

50. Aristotle, *Posterior Analytics* I.1.71a12–28. Here I provided the translation of the Hubien text: "Et sic non oportet ad sciendum vel ad quaerendum quid nominis prius cognoscere de diffinito quia est; immo in omni processu, sive dialectico sive demonstrativo, necesse est de omni termino quo in illo processu utimur, praecognoscere quid nominis, sicut bene dicit Aristotiles, primo Posteriorum." The critical text here has the following: "Et sic bene oportet ad quaerendum vel ad sciendum quid nominis praecognoscere de definito quia est; immo in omni [K150vb] processu, sive dialectico sive demonstrativo, necesse est de omni termino vocali quo in illo processu utimur, praecognoscere quia est, sicut bene dicit Aristoteles, primo Posteriorum."—"And in this way it is in fact necessary for seeking or knowing the nominal definition to know beforehand that the definitum exists; indeed, in every reasoning, be it dialectical or demonstrative, it is necessary to know beforehand of each spoken term that we use in that reasoning that it [i.e., what it signifies] exists, as Aristotle correctly states in bk. 1 of the *Posterior Analytics*."

only ask what the thing is that is white, and that is nothing but a stone. Therefore, in the case assumed above, I give a satisfactory reply to the question if I declare that the white thing is a stone; and if I add something else that signifies or connotes something other than the stone, then I provide more in my reply than what was asked for. Since, therefore, a purely quidditative definition should precisely indicate what a thing is, if the term 'white [thing]' has a quidditative definition, then it is necessary that it be the term 'stone', or its quidditative definition, or an expression consisting exclusively of substantial terms.[51] But this is impossible, for after removing whiteness and retaining the substance subjected to it, the definitum, namely, 'white [thing]', would not supposit for anything, for nothing would be a white thing, and the definition would still supposit for something, namely, for the thing that it supposited for before. Thus it would not be converted with the definitum, nor would it be truly predicated of it, which is impossible; therefore, it is impossible that 'white [thing]' should have a purely and properly quidditative definition.

Furthermore, if 'white [thing]' should have a purely quidditative definition, then I assume that it would be this: 'A white [thing] is a thing that is white' [*album est res alba*],[52] or 'A white [thing] is a [thing] colored by whiteness', or something like this; for this is what one has to say, because the aggregate of substantial predicates would not suffice, as has been said. But then it is clear that that definition would not only say what a white [thing] is, but at the same time it would also say what a white [thing] is like. For to be [a] white [thing] [*esse album*], or to be [a] colored [thing] [*esse coloratum*], not only signifies being something [*esse aliquid*] (which is what we ask about when we ask what a thing

51. The critical text here has the following: "Cum ergo definitio pure quiditativa debeat indicare praecise quid est, necesse est, si ille terminus 'album' habeat definitionem quiditativam, quod illa, si sit illius termini 'lapis', vel [sit] eius quiditativa definitio, [V101va] vel quod sit oratio constituta praecise ex terminis substantialibus"—"Since, therefore, a purely quidditative definition should precisely indicate what a thing is, it is necessary that if the term 'white [thing]' [*album*] has a quidditative definition, then that, if it is that of the term 'stone', should either be its quidditative definition, or that it should be an expression consisting exclusively of substantial terms." On the basis of the apparatus, however, this can be amended as follows (providing a reading consistent with the Hubien-text, which I have translated in the main text): "Cum ergo definitio pure quiditativa debeat indicare praecise quid est, necesse est, si ille terminus 'album' habeat definitionem quiditativam, quod illa sit iste terminus 'lapis', vel quod [sit] eius quiditativa definitio, [V101va] vel [omnino—Hubien] quod sit oratio constituta praecise ex terminis substantialibus."

52. Since English syntax already requires the addition of 'thing' in the translation of the substantivated adjective *album,* the strict translation of this definition in English—'A white [thing] is a white thing'—would be tautologous. Of course, it is also *trivial* in Latin, but it is not a tautology. This is what I have tried to save in this formulation.

is), but it also signifies being such and such [*esse aliquale*] or some disposition belonging to [*adiacens*] the thing that is white. Therefore, that definition was not purely quidditative, for such [a definition] should only say what [the thing] is, and this would not only say what [the thing] is [*quid est*], but also of what quality it is [*quale est*], and thus it would connote[53] the quality belonging to the thing that is white [*adiacente ei quod est album*].

The second claim contained in this section is that a connotative term can have a quidditative definition in a less proper sense, and one that is more broadly so called. For it is by means of the subjects that their *per se* attributes are defined, as is said in bk. 1 of the *Posterior Analytics* and bk. 7 of the *Metaphysics*.[54] Therefore, a definition of a connotative term is called quidditative, because it indicates what it is [*quid est*] not only where the suppositum but also the connotatum is concerned. For example, the definition of 'pug' [*simum*] is 'concave nose', and by saying 'nose' I say what it is and I likewise indicate what the term 'pug' supposits for (since it is a concave nose, and a pug is nothing but a nose); however, by adding 'concave' I indicate what that term appellates, for that is the very same thing, and none other, that the term 'concave' signifies, namely, concavity. Similarly, if I define 'pugness', then I say that it is the concavity of the nose; and when I say 'concavity', then I indicate what it is that 'pugness' supposits for, since it is concavity (because pugness is a concavity, and nothing else); but when I add 'of the nose', I indicate what 'pugness' appellates, for it is the nose, given that a concavity would not be a pugness were it not in a nose.

Therefore, in this connection we have to note that in the case of connotative terms, the genus is not predicated of its species *in quid* in the strictest sense, but broadly speaking it is. Thus, when I say: 'A white [thing] is [a] colored [thing]' I do not say precisely what a white [thing] is, but I add what it is like, as I said earlier; therefore, this is not quidditative predication in the strictest sense. But broadly speaking it is admitted to be quidditative, because it indicates what it is for which 'white [thing]' supposits, this being the very same thing as that for which 'colored [thing]' supposits, and at the same time it indicates what 'white [thing]' appellates, for this is the same as what 'colored [thing]' appellates. This position is plainly what Aristotle intends in bk. 7 of the *Metaphysics,* where he says that 'definition', like 'quiddity' [*quod quid est*], is used in many ways, "and indeed 'quiddity' in one way signifies substance and some this [*hoc aliquid*], but in another way it signifies any of the other categories."[55] He also says later: "It is clear that definition and quiddity primarily

53. I have taken this reading from the critical apparatus.

54. Aristotle, *Posterior Analytics* I.3.73a8 et seq.; *Metaphysics* VII.5.1030b29–35.

55. See Aristotle, *Metaphysics* VII.4.1030a18.

and absolutely belong to substance. But not exclusively, since they also pertain to others, although not primarily."[56] And finally, at the end of the chapter, he concludes: "It is clear, therefore, that some definition is of the quiddity itself, which either pertains exclusively to substance, or does so maximally and primarily and absolutely."[57]

(6) The sixth section makes explicit a further property of quidditative definition in the strict sense, namely, that just as it does not pertain to connotative terms, so too it does not incorporate within itself a connotative term, or a term signifying some connotation. For if the definitum were not connotative, and a connotative term were to be taken up in the definition,[58] then this would not be predicated univocally and purely quidditatively, but denominatively, on account of the denominative or connotative term that it incorporated within itself.

If, however, the term defined is connotative, then its quidditative definition in the broad sense will embody a connotative term, or one that signifies the connotation that the term defined connoted, and it will not incorporate within itself any term that signifies a connotation in relation to [*circa*] what the term defined supposits for, apart from what the term defined connotes; when I say, 'a pug is a concave nose', 'concave' does not signify anything in relation to the nose except what was connoted by 'pug'. But if a term signifying the connotation in relation to that for which the defined term supposits were not incorporated, then what the connotative term in question connoted would not be covered.[59] If, however, the definition connotes more than what the defini-

56. Ibid., 1030b5.

57. Ibid., VII.5.1031a12–14.

58. In the critical text we have "Quoniam si definitum sit non-connotativum et in definitione non capitur terminus connotativus," but the "non" before "capitur" here should obviously be omitted [and mss. EVK do omit it].

59. "Et si non reciperet terminum significantem connotationem circa illud pro quo supponit terminus definitus, nec illam quam terminus connotativus connotabat." This sentence is missing from the Hubien text and is somewhat unclear in the critical text. In any case, Buridan's point seems to be that if the definitum is connotative, then its quidditative definition in the broad sense should supposit for the same things as the definitum does, and also connote the same things with respect to these supposita as the definitum does, either by means of incorporating connotative terms that connote these connotata or by incorporating such terms that signify these connotata in relation to the supposita in question. But if there is a mismatch between the supposita and connotata of the definitum and the definition, then the definition is no longer a quidditative definition, not even in the broad sense. In view of this, the sentence perhaps should be supplemented as follows: "Et si non reciperet terminum significantem connotationem circa illud pro quo supponit terminus definitus, nec illam [connotationem significaret] quam terminus connotativus connotabat."

tum connotes with respect to what it supposits for, then it will no longer be a quidditative definition in the broad sense,[60] but it would amount to a certain description of the subject in terms of some attribute [*passio*]; for just as in the case of terms suppositing for the same thing or things the connotative term is said to be the attribute of the nonconnotative one, so the more connotative term is said to be the attribute of the less connotative term.

(7) The final section adds another property, namely, that a quidditative definition in the strict sense signifies more than the definitum, because it signifies whatever the genus and the difference constituting it signify. The genus in the case of nonconnotative terms always signifies more than its species, as when 'man' signifies only men, whereas 'animal' signifies men and brutes. But the definition does not supposit for more than the definitum, for the genus is restricted by the difference added to it so as to supposit only for the items for which the definitum supposits.

With respect to this property the quidditative definition also differs from the nominal definition, for the quidditative definition should signify much more, or something other, than the definitum. And this derives from the other difference between them, namely, that to the definitum of a nominal definition there should correspond a complex concept, whereas the species defined quidditatively has an incomplex concept; for it is not the species but the defi-

60. Here I follow the omission of the Hubien text and of several codices indicated in the critical apparatus. In the critical text we have the following: "Si autem caperet terminum connotativum vel significantem connotationem quam terminus definitus connotabat, et non reciperet terminum significantem connotationem illam quam connotabat ille terminus, non esset amplius definitio quiditativa neque proprie neque communiter dicta, sed esset descriptio tamquam subiecti per passionem. Sicut enim in terminis supponentibus pro eisdem terminus connotativus dicitur passio termini non-connotativi, ita terminus magis connotativus dicitur passio termini minus connotativi." This may be translated as follows: "But if it incorporated a connotative term or one signifying the connotation which the term defined connoted, and it would not embody a term signifying that connotation which that term [namely, the first-mentioned connotative term ⟨?⟩] connoted, then it will no longer be a quidditative definition either strictly or broadly speaking, but it would amount to a certain description of the subject in terms of some attribute [*passio*]; for just as in the case of terms suppositing for the same thing or things the connotative term is said to be the attribute of the nonconnotative one, so the more connotative term is said to be the attribute of the less connotative term." If the text is not corrupt here, its point must be that the connotation of the term defined should be preserved by the definition, and if the definition connotes even other things, which are not connoted by the term defined, then the definition, on account of this extra connotation, amounts to an attribute of the term defined; but the formulation as it stands is so obscure that I am not quite sure what its point is. In any case, if we omit the obscure part, then the text makes the same point.

nition of the species that is composed of genus and difference, whether with respect to utterance or concept.

First Doubt

Concerning what has been said so far, three difficult questions arise, and it will be useful to consider them in a slight digression. The first is whether the definition of an attribute by means of its subject implies a redundancy [*nugatio*], or at least whether the addition of the attribute to the subject as a determination to the determinable does, as when we say 'a pug nose', 'an even number', 'a male animal', etc. And this question was raised by Aristotle in bk. 7 of the *Metaphysics*.[61] The second is whether such a definition should be called a nominal definition, as when I say 'a pug is a concave nose'. The third is whether every attribute is to be defined by means of its subject.

In connection with the first question it appears to me that there is a huge redundancy in saying 'pug[62] nose' or in saying 'even number'. For it is permitted to put the definition in place of the term defined in every expression, and no absurdity seems to follow from this; on the contrary, the expression is thereby made more manifest and explicit.[63] For example, if you say that Socrates has a pug nose, then in place of 'pug' I put 'concave nose', namely, the definition in place of the definitum; but then I will be landed with the assertion that Socrates has a concave nose nose, and here we have explicit redundancy; hence we similarly had redundancy, although implicitly, in saying that Socrates had a pug nose.

And it would likewise seem to me to be redundant to use the expression 'the pugness of the nose'. For if someone says that the pugness of the nose is an ugly disposition of the nose, then in place of the term 'pugness' I put its definition, which is 'the concavity of the nose'. But then I will have the expression 'the concavity of the nose of the nose is an ugly disposition of the nose'. And here we have explicit redundancy. In the same way, if 'odd' is described as a number having-a-unit-in-the-middle, you will speak redundantly if you say that three is an odd number, for if you replace 'odd' with its definition, you will get then that three is a number having-a-unit-in-the-middle number. And the same goes for other cases.

61. Aristotle, *Metaphysics* VII.5.1030b29–35.

62. Here I use 'pug' for translating the purely adjectival form *simus,* in order to render the argument persuasive in English. See 8.2.4 n. 64.

63. The second clause of this sentence (or some equivalent variant of it) is not in the critical text but is added by several codices.

But the opposite would appear to be true, for all people commonly speak in this way. And it is also acceptable to add an adjectival determination to its substantive. But 'pug' is the adjectival determination of 'nose'; therefore, it is acceptable to say 'pug nose'. And the same goes for other cases.

To this question I believe we should reply that an adjectival name, taken adjectivally, is such that just as it does not provide a suppositum for the verb [*non reddit suppositum verbo*] according to grammarians, so also it does not supposit, strictly speaking, according to logicians. But if it is substantivated in the neuter gender, then it can provide a suppositum for the verb according to the grammarian, and it can also supposit according to the logician. Therefore, grammatically it is not correct to say: 'A white [*albus*] runs' or 'A snub [*simus*] is a nose', for the expression is ungrammatical or incomplete, but it is grammatically correct to say that 'A white [thing] runs' [*album currit*], or 'A pug is a nose' [*simum est nasus*].[64] And such an adjective substantivated in the neuter gender is analyzed into a subject and an adjective taken adjectivally, for example: 'white [thing]' [*album*] amounts to 'white thing' [*res alba*] or 'white being' [*ens album*], and 'pug' [*simum*] amounts to 'snub thing' [*res sima*] or 'snub nose' [*nasus simus*].

If, therefore, I say 'A white man runs', I do not believe that 'white' supposits for something but that either the whole [phrase] 'white man' taken together supposits, or that only 'man' does, with 'white' determining and restricting its supposition. If, however,[65] I say 'A white [thing] runs' [*album currit*], I take it that 'white [thing]' here signifies a substance, for which it supposits, and whiteness, which it appellates, or alternatively, if it does not properly speaking signify a substance and a whiteness, still, a substance and a whiteness it signifies.[66] But when I say 'A white man runs', I claim that 'white' signifies no substance at all, but only whiteness. And so the term 'white' [*albus*] signifies

64. I use 'snub', an adjective in English, to translate the purely adjectival form, *simus,* and 'pug', a term that can be used both as a substantive and as an adjective in English, to translate the substantivated neuter form, *simum.* Since in the case of 'white' I could use no similar trick—despite the fact that 'white' is sometimes used in substantivated form for 'white man' in English, but no inflection indicates the difference—I use the bracketed addition of 'thing' to indicate the substantivated form.

65. Here I follow the Hubien text (*si autem,* rather than the critical text's *verbi gratia* [for example]), for it offers a logically better transition from the previous sentence.

66. I think what Buridan is indicating here in his characteristic manner (i.e., making a distinction in terms of different word order, pretty much as we do in modern logic by changing the order of logical operators) is that *album* does not signify substance and whiteness in the same way, but it signifies substance in one way, namely, primarily, for which therefore it supposits in a proposition, and it signifies whiteness in another way, namely, secondarily, as its connotatum, which therefore it appellates in a proposition.

nothing more or other than the term 'whiteness' [*albedo*] does (except where grammatical modes of signification are concerned), but they signify the same item, namely, whiteness, in a different manner, for 'whiteness' signifies it in the manner of a subsistent thing, whereas 'white' signifies it in the manner of a thing pertaining to [*adiacens*] another.

I take it that this is how we should understand what Aristotle says in the *Categories*,[67] namely, that 'white' [*album*] signifies nothing but a quality. And this I believe to be true, taking 'white' adjectivally, as in saying 'white wood' [*lignum album*].[68] I take it, therefore, that 'white [thing]' [*album*], substantivated in the neuter gender, both supposits and appellates, whereas 'white' [*albus*] does not supposit but only appellates, and it appellates what it signifies. In the same manner, I also believe that a substantive name in an oblique case does not supposit but only appellates, and it appellates that which it signifies, and by appellating it determines the supposition of the substantive to which it is added. And the nominative and the oblique [forms] signify the same and not different [things], but in diverse ways, in diverse grammatical modes of signifying [*quantum ad diversos modos significandi grammaticales*]; for the nominative [form] signifies in the manner of something subsistent, the oblique [form] in the manner of something adjacent, i.e., in the manner of something related in some way to the thing that the nominative [form] with which it is construed signifies, or for which it supposits.

Therefore, to the question raised [above] I reply that it is correctly permitted to put the definition in place of the definitum, and that we also correctly say 'snub nose' [*nasus simus*], as [when we say] that Socrates has a snub nose. And I concede that the definition of the substantivated [term] 'pug' [*simum*] is 'concave nose' [*nasus cavus*]. But the term 'snub' [*simus*] taken in itself does not have a definition, nor does the term 'white' [*albus*], nor do their like, for the definition could not be predicated of the definitum; this is because it would constitute an ungrammatical or incomplete expression to say: 'A snub is a concave nose', or 'A white is a colored with whiteness', and their like. Thus, if I say: 'Socrates has a snub nose', I am taking 'snub' adjectivally, and in that manner its definition does not comprise 'nose', and hence it is not correct to take 'concave nose' in its place. And thus, if I say: 'Snubness is the concavity of the nose', I correctly define 'snubness'.[69] Can I therefore appropriately say: 'The snubness of the nose is an ugly disposition'? I think not, for

67. Aristotle, *Categories* 5.3b18–19.

68. Of course, the neuter form *album* can be either a substantivated adjective, 'white [thing]', or a pure adjective, 'white', which only happens to be in the neuter gender. Hence Buridan's need for the distinction to show in which way he can accept Aristotle's position.

69. Or 'pugness'; the difference in English is irrelevant.

whatever 'of the nose' appellates is appellated by 'snubness' without the addition of 'of the nose', and so 'of the nose' would be added pointlessly; rather, one should say: 'Snubness is an ugly disposition', or the 'Concavity of the nose is an ugly disposition'. Likewise, one may also correctly say, 'A snub nose is ugly' [*Nasus simus est turpis*]. But we would not correctly say 'A pug a nose is ugly' [*Nasus simum est turpis vel turpe*],[70] for 'pug' [*simum*], taken substantively, signifies the nose, which is not signified by 'snub' [*simus*].

Second Doubt

The second problem is also quite difficult. If I say 'A white [thing] [*album*] is a white thing [*res alba*]' or 'A pug [*simum*] is a snub nose [*nasus simus*]', is it the case that the expressions 'white thing' and 'snub nose' are the nominal definitions of the terms 'white [thing]' and 'pug'? And I immediately reply conditionally that if to the name 'pug' there corresponds in the mind a complex concept that corresponds to the expression 'snub nose', and similarly, if to the term 'white [thing]' there corresponds in the mind a complex concept that corresponds to the expression 'white thing', then these expressions are without a doubt merely nominal definitions. But if to the term 'white [thing]' or 'pug' there corresponds in the mind an incomplex concept, by means of which we conceive in a confused and indistinct manner substance and whiteness, or a nose and concavity, without discerning substance by means of one concept and whiteness by means of another, nor the nose by means of one concept and the concavity by means of another, then those definitions are not

70. Here I relied on the Hubien text and on the critical apparatus, rather than on the critical text, which has simply *Simum est turpe* (A pug is ugly). The reason for this decision is that this sentence is grammatically correct, whereas Buridan's point seems to be that we have to get an ungrammatical construction if we construe *nasus* (nose) with *simum* (pug) taken as a substantive, as opposed to construing it with the purely adjectival *simus* (snub). Now, obviously, *simum* cannot be added to *nasus* even as an adjective (i.e., in the sense of 'snub'), for that would violate the requirement of gender agreement (*nasus* is masculine, whereas *simum* is in the neuter gender). But this is not the point Buridan wishes to make. The point is that *simum* in the sense of 'pug' interpreted as a substantive, i.e., as referring to a snub nose, already involves in its definition the nose, and this is why in this form and according to this interpretation it cannot be the determination of the substantive *nasus.* This is the point I intended to bring out by adding the indefinite article both to 'pug' and to 'nose', because this addition seems to indicate that these are two independent substantives, both of which can be determined by something else, but neither of which can serve as the determination of the other.

nominal but real [i.e., quidditative] definitions [*non sunt dicentes quid nominis, sed quid rei*].

But you will reasonably ask which one of these two positions should be stated categorically. And I say that a thoroughgoing investigation of this [question] pertains to the *Metaphysics,* or, in a certain respect, to *On the Soul.* Since, however, I have already digressed from logical considerations, I intend to touch a little on how to find out about the truth of the matter, in the following manner. As I said in [my commentary on] bk. 2 of *On the Soul,*[71] sight does not apprehend any whiteness as distinct from its subject, namely, by means of the concept according to which it is called whiteness; neither does it apprehend a man, a stone, or a stick distinctly from their accidents, namely, by means of the concepts according to which they are called a man, a stone, or a stick; rather, it apprehends these all together while judging them as white, big, round, moving, or at rest. And thus it might seem to someone that to the terms 'white', 'big', etc. there correspond incomplex concepts, for there correspond incomplex concepts in the senses, and, consequently, also in the intellect.

But if we assert that a sense apprehends only in a singular manner, then we have to correct what was said, namely, that a sense does not apprehend something white or big by means of the concept according to which it is said to be white or big, for that would be to apprehend it in a universal manner, but it apprehends *this* white [thing] in a singular manner as *this* white [thing], and *this* big [thing] in a singular manner as *this* big [thing]. And this seems to be a complex concept, for it apprehends *this* [thing], and apprehends that it is white, and judges it to be *this* white [thing]. For this concept is composed of a concept of a thing [existing] in a subsistent manner according to which we judge it [to be] this and from the concept of a thing [existing] in an adjacent manner, according to which we add 'white', judging that *this* is white. And we should hold, I believe, that just as I cannot form a purely syncategorematic concept without a categorematic one (although this can occur the other way around), so too I cannot correctly form an adjectival concept without a substantive concept.

So, on the basis of what has been said it might seem that to the substantive name 'white [thing]' [*album*] there corresponds a complex concept in the intellect, for from the adjectival sensation the intellect forms an adjectival thought [*intellectio*] and from the substantive one a substantive one. But the intellect abstracts from singularity, so that which the sense judges [to be] this in a sin-

71. J. Buridan, *Ioannis Buridani Expositio de Anima,* bk. 2, tr. 3, p. 78, and J. Buridan, *Ioannis Buridani Quaestiones de Anima* [ed. Lokert], bk. 1, q. 6, p. 517, in J. Buridan, *Le traité de l'âme de Jean Buridan (Prima lectura),* ed. B. Patar (Louvain-la-Neuve: Editions de l'Institut Supérieur de Philosophie; Longueil, Editions du Préambule, 1991).

gular manner is judged by the intellect universally [to be] some being, or a thing. The sense therefore judges this white [thing] singularly, and the intellect judges a white thing universally, and, for the sake of brevity, for the complex concept corresponding to the expression 'white thing' we use the substantivated name 'white [thing]' [*album*]. Consider, then, if you want, in terms of a higher science, namely, philosophy, which one of these two [alternatives] is true and which one is false.

And if we hold that there is this complexity in the sense, and together with this we also hold that the concept corresponding to the term 'this' is substantial, namely, an individual [concept] in the category of substance, as is indeed tenable, then I should say that the sense does indeed judge [there to be] a substance according to a substantial concept and an accident according to an accidental concept, judging this white [thing] or this little [thing] or this big [thing]. Therefore if a dog, which does not have intellect, is called by its master and it sees him, then it will judge that the person it sees is calling it and will go to him; and if it does not see his master [when he is calling it], but sees someone else [who is not calling it], then it will judge that the person it sees is not calling it, nor will it go to him, but it will look for the one calling, namely, its master.

But why is it said in bk. 2 of *On the Soul* that the senses do not apprehend substance, except *per accidens?*[72] The reply is that this [remark] should be understood as alluding to the specific substantial concepts. For it is not the senses but the intellect that distinguishes between a man and a donkey or a goat, or between a stick and a stone, and this by means of their substantial concepts, namely, those according to which they are called *this* stick and *this* stone. But [the senses] distinguish between them by means of accidental concepts, such as this white [thing], that black [thing], this big [thing], that small [thing], this [thing] at rest, that [thing] in motion, or even, eliciting further concepts, by means of the common sense [*sensus communis*] that this is friendly and that is inimical. And this should be made apparent in more detail by consulting bk. 2 of *On the Soul*.[73]

Third Doubt

Concerning the third question we have to assume that a subject and an attribute always are significative terms and that the attribute is truly and affir-

72. Aristotle, *On the Soul* II.5.417b22–24.

73. Ibid.

matively predicable of the subject, not essentially, or quidditatively, but accidentally, or denominatively, and further that the denomination derives from the attribute, in the sense that the attribute appellates some disposition other than what is signified by the subject. And then three kinds of attributes are to be defined, one kind being the substantive, another being the adjective taken adjectivally, and the third being the adjective substantivated in the neuter gender.

In the first way, we say that 'time' is the attribute of 'motion' and 'pugness' is that of 'concavity': for 'pugness', besides its signification of concavity, appellates the nose; therefore, saying 'A motion is a time', or 'A concavity is a pugness' is predicating an attribute of a subject [in this first way]. In the second way, 'snub' is the attribute of 'nose' and 'white' is an attribute of 'man', of 'stone', or of 'being'; and to say 'A nose is snub', 'A man is white', or 'A thing is white' is to predicate an attribute of its subject [in this second way]. The predication of an attribute of its subject in the third way is exemplified by saying 'A nose is a pug' or 'A man is [a] white [thing]'.

In the first way, and also in the third, the predication of the attribute of the subject is convertible with the predication of the subject of the attribute, for example, 'A concavity is a pugness; therefore, a pugness is a concavity'; similarly, 'A man is [a] white [thing]; therefore, [a] white [thing] is a man'. But in the second way there is no such a conversion, for we say 'A nose is snub', but we do not say 'A snub is a nose', because the expression would be ungrammatical or incomplete, as was said earlier. But in the conversion we have to substantivate the adjective as follows: 'A man is white; therefore, [a] white [thing] is a man'.[74]

From these points it is immediately clear that attributes of the second kind cannot be defined when taken on their own account by means of a definition that is predicable of the definitum taken significatively, for they cannot be subjects on their own account, as has been said. Some of them, however, can be defined by means of a nominal definition, as when I say that the name 'envious' signifies as much as the expression 'unhappy about the good fortune of someone else'. But if a predication were to take place by means of the verb 'is' and the terms taken significatively, e.g., by saying 'An envious is unhappy about the good fortune of someone else', then the predication would not be correct, as has been said, except by virtue of an added or implied substantive, as by saying 'An envious man is a man unhappy about the good of someone else'. But not even this definition of such an attribute is framed in terms of its subject, for such an attribute, as has been said, does not imply in its signifi-

74. Again, throughout this passage '[a] white [thing]' translates the substantivated adjective *album*.

cation the subject or the signification of the subject, but only the disposition appellated in relation to [*circa*] the signification of the subject.[75]

Concerning the attributes of the third kind it seems to me that they all can be defined by means of their subject. For, since they imply in themselves a subject and an attribute of the second kind, such attributes are to be defined in terms of these, for example, '[A] white [thing] is a white thing' and 'A pug is a snub thing'[76] or 'snub nose'. And it is more correct to say that a pug is a concave nose than to say that a pug is a snub thing or a snub nose, although any of these can be stated. Therefore, I say that it is more correct to say that a pug is a concave nose than that a pug is a snub nose, although they are equivalent in signification, for snubness is defined by concavity, as has been said.

Therefore, it is also reasonable that the concrete [term] should be defined by means of the concrete [term], for example, 'pug' by 'concave [thing]' [*cavum*] or 'concave nose' [*nasus cavus*]. For the analysis seems to be more transparent, because the abstract form is analyzed analogously. I say, therefore, that it is better to say that a pug is a concave nose than that a pug is a concave thing, for attributes substantivated in the neuter gender that imply the subject in their concept are of two kinds. Some manifestly imply and determine for themselves a specific subject. For example, the name 'pug', implies 'nose', and 'male' implies 'animal', and 'odd' implies 'number', and 'equal' implies 'quantity'. And then it is reasonable that such an attribute should be defined in terms of such a subject. The other attributes do not determine a specific subject for themselves, or they determine one that is not commonly known; for example, such [attributes] are 'white', 'one', 'qualified', 'diverse',[77] and their like. And in their case it is sufficient to analyze them in terms of a common subject, for example, '[Something] white is a white thing', '[Something] one is a thing that is one', '[Something] qualified is a thing that is [somehow] qualified', '[Something] diverse is a thing that is diverse', and so on.

We should also note that if such an attribute has a genus, then it is possible

75. Buridan's point here could be represented in modern logic in terms of the so-called lambda operation, an operation that produces an "unsaturated," i.e., incomplete phrase out of a complete expression. Using the lambda operator, which, as it were, "takes out" its variable from the expression in which that variable occurs, leaving the rest behind, the nominal definition of 'envious' can be expressed as follows: λman (envious man) = λman (man unhappy about the good fortune of someone else). The point is that the word 'envious' taken in itself is inherently incomplete on account of its signification. It demands being completed by 'man' (or some other substantive noun), yet, taken in itself it does not signify any man, since it is obviously not synonymous with 'envious man', given that 'envious man' can figure as a subject of a grammatical sentence, whereas 'envious' cannot.

76. *Album est res alba* and *Simum est res sima,* respectively.

77. *Album, unum, aliquale, diversum.*

to define it by means of that genus and its difference or by that genus and its abstract form in place of the difference, for example, '[Something] white is [something] colored by whiteness', or '[Something] white is [something] dazzling sight', or, likewise, '[Something] alterable is [something] changeable with respect to quality', or '[Something] alterable is [something] changeable by alteration'. But then that genus is also definable by its subject, for example, '[Something] colored is a colored thing', and '[Something] alterable is a thing that is alterable'.

Furthermore, attributes of the first of the two aforementioned kinds are also to be defined by their subjects, for even these are of two kinds. For some of them do not supposit for something other than their concrete forms do, as for example a shape [*figura*] is the same as something [so-]shaped [*figuratum*], a privation [*privatio*] is the same as the thing deprived [*privatum*], and a unity [*unitas*] is the same as a thing that is one [*res una*]. And then such attributes taken in their abstract form are to be defined in terms of their concrete counterparts, for example, a shape is a thing so-shaped, a bigness is a big thing, a privation is a thing deprived, and a unity is a thing that is one. But others supposit for things other than their concrete counterparts do, and they appellate the things supposited for by their concrete counterparts; for example, 'pugness' supposits for concavity and appellates the nose. And then, just as the term 'pug' has the nose as its subject and the concavity as its appellatum, so, conversely, the term 'pugness' has the concavity as its subject and the nose as its appellatum. And in both cases the attribute is defined by the subject in place of the genus and by the appellatum in place of the difference. Therefore, just as we say 'A pug is a concave nose', so we say 'A pugness is a nose's concavity'.[78]

These doubts having been taken care of in this digression, let us return to our original topic and continue the discussion [of causal definitions].

8.2.5 On causal definition

(1) A causal definition is an expression that convertibly indicates what the thing is [*quid est esse rei,* the quiddity or essence of the thing] and the reason why [*propter quid*] it is. (2) Such a definition is provided by means of terms that in the nominative case would supposit for the cause or causes of that thing or those things for which the term defined [*defi-*

78. See Aquinas, *De Ente et Essentia,* c. 7, ed. C. Boyer (Rome: Gregorian University, 1933).

nitum] supposits. (3) These terms are placed in those definitions in an oblique case. (4) Some such definitions are given in terms of the formal cause, some in terms of the material cause, others in terms of the efficient cause, others in terms of the final cause, and yet others in terms of several of these causes. (5) Such definitions are most useful in demonstrations *propter quid.* (6) But it often happens that one of these definitions is proved in terms of another, either *quia* or *propter quid*.[79] (7) Aristotle also calls a quidditative definition, or even a definition given in terms of the final cause, a 'formal' definition, as if it were given in terms of the formal cause, but this is an improper locution.

The fifth part is about causal definitions. It contains several sections.

(1) The first is a description of causal definitions. The first part of a causal definition is usually given in the nominative case, and it is the genus or the subject of the term defined, so that in some way it would indicate the quiddity of the thing [*quid est esse rei*], and then there follow the causal terms in some oblique case, restricting the generality of the first part until the definition becomes convertible with the definitum. And so if the causal terms added to the first part are still broader in extent than the definitum, then one has to add to them restrictive differences until the whole becomes proper [*proprium*] to the definitum. For example, in bk. 1 of the *Posterior Analytics* the definition of 'demonstration' is provided in terms of the material cause, namely, that a demonstration is a syllogism from first, true, immediate, prior, better known [propositions], which are the causes of the conclusion.[80] So, 'syllogism' is placed there as the genus or subject of the term 'demonstration', and 'from first [propositions]' is provided to express the matter of demonstration. But since this would still apply to dialectical as well as to demonstrative syllogisms, to restrict it one has to add 'from true, etc.'. This definition, therefore, indicates what a demonstration is, for it is a syllogism, and indicates the reason why [*propter quid*] it is, and it does so in the genus of the material cause, showing from what a demonstration is made up as from its matter, namely, from premises that are first, etc.

(2) The second section shows which terms a causal definition should contain in order that it should indicate the reason why [*propter quid*], [by pointing out] that these terms would supposit for the cause or for the causes if they were added in the nominative case. Thus when I add 'A demonstration is from premises, etc.', the term 'premises' supposits for the material causes of a demonstration, from which it is materially composed. And I say 'if they were added in the nominative case' because they are added in an oblique

79. See 8.8 and 8.9.

80. Aristotle, *Posterior Analytics* I.2.71b20–22.

case, and an oblique term does not supposit, strictly speaking, as was said earlier.

(3) The third section says that these causal terms are placed in these definitions in an oblique case and not in the nominative case. And the reason for this is that if one term is truly predicated of another in the nominative case, then they have to supposit for the same item. But a term that is defined and a causal term placed in its definition do not supposit for the same item, for the same thing is not a cause of itself. Therefore, that causal term cannot be placed in the definition in the nominative case.

(4) The fourth section distinguishes diverse sorts of causal definitions in accordance with the diverse genera of causes. And I can easily provide examples of definitions: by means of the formal cause, [I give a definition] if I say, '[Something] white is [something] colored by whiteness', or 'A man is an animal having a rational soul'; by means of the material cause, if I say that a demonstration is a syllogism from premises that are first, true, etc., or if I say that snubness is the concavity of the nose, or that motion is the act of a being in potency, insofar as it is in potency, or of something movable insofar as it is movable; by means of the efficient cause, if I say that to know is to understand by means of a demonstration, or that motion is the act of a mover insofar as it is a mover; and by means of the final cause, if I say that anger is the desire for vindication, or that sleeping is the rest of the external senses for the sake of the well-being of an animal, or, as is usually stated, that a demonstration is a syllogism producing knowledge, for knowledge is the end to which a demonstration is ordered and for the sake of which it is [constructed].

But some people say that this description of demonstration is a description from what is posterior [*a posteriori*], namely, by means of its effect; for knowledge is the effect of demonstration, given that a demonstration produces knowledge. And some people think we should provide [the definition] in both ways, since the causes are the causes of each other, as is clear from bk. 2 of the *Physics*.[81] For a demonstration is what produces knowledge, and knowledge or knowing is the final cause of demonstration. But it seems to me that in the above-quoted description of demonstration 'knowledge' is taken as the effect and 'demonstration' as the cause, for demonstration was said to be 'a syllogism producing knowledge'. But perhaps if one were to say that a demonstration is a syllogism directed toward knowing, or constructed for the sake of knowing, then the definition would appear to be in terms of the final cause. And this does not make much difference, for examples need not be verified.[82]

81. Aristotle, *Physics* II.3.195a9–10.

82. See Aristotle, *Prior Analytics* I.41.49b33–50a4.

But in the fourth section it is also added that a causal definition is often provided in terms of several genera of causes, which is true in the case of things that have several genera of causes. And such a definition is more perfect and useful than it would be if it were given only in terms of one genus of causes. An example is that a demonstration is a syllogism constituted for the sake of knowledge from first, true, immediate, prior, or better known [propositions], or that anger is the desire for revenge in the ardor of heat around the heart, or that nutrition is the conversion of food into animate body by the vegetative power for the sake of the well-being of the animate body.

(5) The fifth section states that causal definitions are useful for *propter quid* demonstrations. The reason for this is that in a *propter quid* demonstration, the middle term has to signify the cause or causes of that or those items which are signified by the terms of the conclusion, as we shall see in the subsequent chapters. And this is the case if the middle term [in a demonstration] is a causal definition, but this is not so if other definitions figure there as the middle term, as we shall point out later.

(6) The sixth section declares that one definition is often demonstrated by means of another, either [by means of a demonstration] *quia* or *propter quid.* For, since the nominal definition is the best known concerning the definitum and is to be assumed, it can appropriately be the middle term to demonstrate other [definitions], indeed, any other predicates that can be demonstrated as holding of the definitum. But such a demonstration need not be *propter quid.* Also, a description in terms of posterior effects is appropriately a middle term for demonstrating a causal or quidditative definition, but not [by means of a demonstration] *propter quid.* Therefore, in the preface to *On the Soul* it is written that accidents are very useful in the cognition of quiddity.[83] But a causal definition, conversely, is the principle for demonstrating that the description applies to what is described and that the attribute applies to the subject, [and it performs these functions by means of a demonstration] *propter quid.*

Furthermore, since the causes in the diverse genera of causes are causes of each other, it follows that a definition in terms of one cause can suitably be the middle term employed in demonstrating a definition in terms of another. For I correctly demonstrate *propter quid* in the genus of final cause if I conclude that a definition has to be from first, true, and immediate [propositions], because [*propter hoc*] it is a syllogism producing knowledge, or *per se* directed toward knowing; and the same goes for the case when, building a house, I conclude that it has to consist of beams and stones arranged in such and such a way because it is a building designed to protect people from the harm apt to be

83. Aristotle, *On the Soul* I.1.402b23–25.

caused by winds, heat, and storms. And this will be discussed in more detail later.

(7) Concerning the last section we should say that since the formal, final, and efficient [causes] sometimes coincide, in the manner stated in bk. 2 of the *Physics*,[84] many people would call definitions in terms of the final and efficient causes formal ones, distinguishing them from the material ones, for matter does not coincide in this manner with the other causes. But quidditative definitions, given in terms of genera and differences, are also called by many people formal definitions, in the sense in which Aristotle in the *Physics* says that the parts of a definition, namely, the genus and the difference, are forms.[85] They are thus called forms by means of an improper locution, or following the manner of speaking of Plato, who believed that the quidditative predicates signify the ideal forms of singulars, or because the substances signified by the genera and differences in the category of substance differ specifically not on account of their matter, but rather on account of their form.

8.2.6 On description

(1) A description is usually defined as an expression indicating what the thing is [*quid est esse rei,* the quiddity or essence of the thing] in terms of accidents or effects that are posterior to it absolutely speaking [*posteriores simpliciter*]. (2) Therefore, in a description the subject is defined in terms of its attribute or attributes and the cause in terms of its effect or effects. (3) A description, however, incorporates items that are prior and better known to us [*ex prioribus et notioribus quoad nos*] but are not so absolutely speaking [*simpliciter*]. (4) Therefore, by means of descriptions, one sometimes proves quidditative definitions or causal definitions to apply to their definita, not *propter quid* but only *quia.*

The sixth part concerns descriptions. It contains four sections.

(1) The first section is the definition of 'description'. And it seems to me that the first part in a description is to be expressed in the nominative case, in order that it should say what the thing is, and it should be broader than what is described, so that it is the genus of what is described or is related to it in the manner of its genus. It does not have to be a true genus, but it can be an

84. Aristotle, *Physics* II.7.198a25–26.

85. Ibid., II.3.194b26–28.

attribute of what is described, being broader than it. For example, if I say 'Fire is the lightest element', or 'God is the cause of all other beings', then the terms 'element' and 'cause', since they are relative, are not the genera of the terms 'fire' and 'God'. Furthermore, it is necessary to add to that first part terms that narrow it down, until the description becomes convertible with what is described, whether those terms are the attributes of what is described or oblique terms that in the nominative case supposit for the effect or effects of what is supposited for by what is described.

(2) The second section expounds what it is that is defined by means of a description. In one way it is the subject, [defined] in terms of its attribute or attributes, as when I say 'A man is a risible animal', or 'Fire is the lightest element'; in the other way it is the cause, [defined] in terms of its effect, i.e., a term that supposits for a cause or causes, [defined] by means of terms that in the nominative case supposit for the effects of those causes. This is exemplified when I say that a builder is a craftsman of houses, that matter is a presupposed principle from which something comes to be while it is in that which comes to be, that a demonstration is a syllogism producing knowledge, or that nature is the principle of motion and rest. And sometimes a description is provided in terms of attributes and effectual terms together, as when I say that God is the first cause of all beings, or that the soul is the formal principle of a living body or that it is the first act of an organic physical body.

(3) The third section states that a description incorporates items that are prior and better known to us, but not absolutely speaking. That it incorporates items that are prior and better known to us is clear from what was said in the first part of this chapter, namely, that every definition is given for the sake of making the definitum known, and not for the sake of making it known to God, angels, or inanimate natures but to us, and it would not make it known unless it were itself better known to us.

But that it is not better known absolutely speaking is clear from the description of a cause by its effect, for every cause is better known absolutely speaking than what is caused [by it], as is explained in the preface to the *Physics;* and one should also see there how this has to be understood.[86] For now I confine myself to saying that something is said to be better known absolutely speaking than another thing if by knowing it, but not without knowing it, we are able to know the reason why [*propter quid*] the other exists, on account of such and such a genus or species of causes. For in this way every *per se* cause is better known than its *per se* effect; and [it is also better known] to us, although the effect may also in some manner be better known to us. But absolutely speak-

86. Ibid., I.1.184a16–18; Buridan, *Quaestiones super octo Physicorum libros Aristotelis,* bk. 1, q. 6.

ing the cause is said to be better known than its effect and the effect [is said to be] less known.

But a more difficult question is how the definitions of subjects in terms of their attributes can be from things that are better known to us. For even though in the case of causes and effects there are two ways in which the one can be better known than the other—one with respect to *propter quid* and another with respect to *quia,* and so the cause in one way is better known than the effect and thus can define the effect, whereas in the other way the effect is better known than the cause and can thus define the cause—nevertheless, apparently, one cannot say this where the subject and attribute are concerned, for in many cases they are not related as cause and effect. For instance, although the terms 'magnitude' and 'shape' are related to each other as subject and attribute, magnitude is not the cause of shape, nor is shape the cause of magnitude, but magnitude and shape are the same. If, therefore, the subject is better known than the attribute so that the attribute should be defined by it, how can the attribute be better known than the subject?

Here some people reply that the confused concept of an attribute, by means of which the suppositum and the appellatum are conceived together in a confused manner, is prior to the concept of the subject, by means of which the suppositum is conceived without the appellatum; but when we compare the concepts by which we distinctly conceive of the suppositum and the appellatum between themselves, then the concept of the suppositum, which is called 'subject', is prior to the concept of the appellatum, which is called 'attribute'.[87] Alternatively, a more probable answer would accord with what was touched on in the fourth part of this chapter in the digression, namely, that every attribute is posterior in its concept to its proper or common subject. For if the attribute is a substantive or if it is substantivated in the neuter gender, then it has a complex concept consisting of the concept of the suppositum and the concept of the appellatum, and something composite is naturally posterior to the things of which it is composed. If, however, the attribute is an adjective taken adjectivally, then it has the concept of the appellated thing in the manner of something adjacent to something else. And such a concept always presupposes a substantive concept, for I do not understand something to be adjacent unless it is understood to be adjacent *to* something. Therefore, it is reasonable to define every attribute by means of its subject insofar as it is a term that is prior in its concept, if the attribute is definable on its own [*per se*].

This notwithstanding, it remains true that not just any subject is conceptu-

87. For example, in the case of 'pug', the suppositum is the nose, whereas the appellatum is the concavity of the nose, and, correspondingly, the concept called the 'subject' is the concept 'nose', and the concept called the 'attribute' is the concept 'concavity'.

ally prior to anything attributed to it. For example, by the senses I perceive this white [thing], and thus I perceive this thing or this being or this white [thing]; and although that white thing is silver, nevertheless, I may not judge it to be silver, but perhaps I judge it to be lead.[88] Therefore, although someone perhaps never had the substantial concept of silver, he would make a judgment concerning this white [thing], even though 'white' is an attribute and 'silver' is the subject. In the same way, in the case of universal intellectual terms, when I conceive of a white [thing] [*album*], I conceive of something white [*aliquod album*] or a white thing [*rem albam*], but it is not necessary that then I conceive of white snow or a white swan in terms of these specific concepts. Therefore, I can have the concept of this attribute without the concept of such a specific subject.

In this way, therefore, the attribute can be prior with respect to some concept to such a subject thereof, and can even define it. For example, I know that something is the hottest and the lightest, but I do not believe fire to be the hottest and the lightest;perhaps I believe that the sky or a vacuum is lighter or that the sun is hotter. But after I find out that there is no vacuum, and that the sky is neither hot nor cold and neither heavy nor light, and that no other element is hotter or lighter than fire, then I conclude that this is the description of fire, namely, that 'Fire is the hottest body' or 'Fire is the lightest element'. And the same goes for many other cases. But I would not describe the term 'nose' by means of the term 'pug', nor the terms 'being' or 'something' by means of some attribute, for then I would describe something better known by means of something lesser known.

(4) The fourth section is a corollary that clearly follows from the preceding section and its explanation.

8.2.7 On composite definitions

(1) Often several of the above-described modes of definitions are combined and this renders the definition more perfect. (2) And this is the reason for the classification of definitions that Aristotle provides in several places, namely, that some definitions of the same definitum sometimes are just like the principle of a demonstration, others are like the conclu-

88. See J. Buridan, "John Buridan on the Soul and Sensation, with an edition of the *Quaestiones in Aristotelis De anima liber secundus, de tertia lectura*," ed. P. G. Sobol (Ph.D. diss., Indiana University, 1984 [Ann Arbor: University Microfilms International, 1984]), pp. 162–77.

sion, and still others are like the whole demonstration, though differing in arrangement.

The final part is about definitions that consist of several definitions. And it is quite clear if we provide some examples. Thus, one definition of 'soul' asserts that the soul is the principal intrinsic principle of living, sensing, and understanding, as is clear from bk. 2 of *On the Soul*,[89] but another is that the soul is the first substantial act of an organic physical body potentially having life. And the second is demonstrated by means of the first thus: every principal intrinsic principle of living, sensing, and understanding is the first substantial act of an organic physical body potentially having life; and every soul is such a principle; therefore, [every soul is the first substantial act of an organic physical body potentially having life]. So the composite definition would be that the soul is the principal intrinsic principle of living as the first act of a living body potentially having life.

In like manner, one definition of 'demonstration' is that a demonstration is a syllogism producing knowledge. By this [definition] one can conclude the second, namely, that a demonstration is a syllogism from first, true, etc. [principles]. And the composite definition is that a demonstration is a syllogism producing knowledge consisting of first, true, and immediate etc. [principles]. Likewise, from [the definition] that a house is a building protecting us from the winds and rain one infers that a house has to consist of foundation, walls, and roof.

One of these definitions, therefore, is called the principle of demonstration, for it becomes the middle term involved in demonstrating another definition of the definitum. The other is called the conclusion of the demonstration, because it is predicated of the definitum in the conclusion, but not because it is the conclusion. But the third, which is compounded from these, is called a whole demonstration, for the aggregate consisting of it and the definitum contains the middle term and the extremities of the demonstration. But it is said to be "differing in arrangement," for this sort of middle term and the extremities are arranged differently in a demonstration, since there they are arranged in one way in the two premises and one conclusion, and [they are arranged] in another way in the predication of this definition of the definitum, given that in this case we have only one proposition.

Let these be the final points to be made about definitions, for their demonstrative investigation and thorough discussion pertains to the considerations raised in first philosophy.

89. Aristotle, *On the Soul* II.1.412a27–28.

Third subject matter: On demonstrations

8.3 Introduction

Next we should discuss demonstrations, for this is the third subject matter of this treatise. First I shall discuss knowable questions [*de quaestionibus scibilibus*] and precognitions [*de praecognitionibus*]; second, the agreements and differences between demonstrations and dialectical arguments, as well as those that hold between knowledge and opinion; third, the indemonstrable principles of demonstration; fourth, the *dici de omni,* the *per se,* the universal or [that which pertains to something] 'insofar as what it is' [*secundum quod ipsum*]; fifth, the several distinctions between demonstrations; sixth, the demonstration *propter quid* in particular; seventh, the demonstration *quia* and whether a circular demonstration is possible; eighth, the demonstration *ad impossibile* and some others; ninth, some comparisons of demonstrations; and the tenth part shows how each of the knowable questions can be answered [*terminari*].

Having dealt with the first two subject matters of the eighth treatise, namely, with divisions and definitions, we turn to the third subject matter, namely, demonstrations. And this subject covers ten chapters, which are clearly listed in the first part of this third subject. This chapter, therefore, will deal with knowable questions and precognitions, which are the necessary precursors to demonstrations as such.

8.3.1 On this whole subject matter in general

This chapter will contain seven principal parts. The first propounds the points to be discussed in connection with this whole subject matter in accordance with the distinction of the chapters; the second will list the knowable questions in a certain general enumeration and will show the exhaustiveness of this list; the third will clarify in what way all these questions raise queries about the middle term; the fourth will distinguish the [parts] of which a demonstration has to consist; the fifth will show what should be realized beforehand [*praecognoscere*] about them; the sixth will manifest which one of these it is whose unity accounts for the unity of [some] science or other; and the

seventh will clarify whether the premises are known earlier in time than the conclusion.

8.3.2 On the four knowable questions

(1) Aristotle enumerates four knowable questions, namely, if [something] is [*si est*], what it is [*quid est*], how it is [*quia est*], and for what reason it is [*propter quid est*].[90] (2) These can be distinguished in the following manner. A question raises queries either about being or about quiddity; when it is asking about being, then it is either asking about being absolutely [*de esse secundo adiacente*]—as in [the question] whether there is a God or in [the question] whether there is a vacuum, and this we call the question *if it is,* taking 'if' [*si*] as meaning 'whether' [*utrum*]—or it is asking about being somehow [*de esse tertio adiacente*], as in [the question] whether God is infinite or whether motion is a thing distinct from the movable thing, and this we call the question of *how it is.* But the question asking about quiddity is either asking about the quiddity of the thing referred to in the question, as when we ask 'What is a man?' or 'What is God?', and this we call the question of *what it is,* or it is asking about the quiddity of the cause of the thing referred to in the question, and this we call the question of *for what reason it is.* For when I ask for what reason a man exists, or for what reason a man is risible, I do not ask what a man is or what it is for a man to be risible, but rather I ask what the cause of the being of a man is or what the cause of a man's being risible is. (3) But these questions can also be distinguished otherwise, namely, in terms of whether they concern a number of things or not [*per ponere in numerum vel non ponere in numerum*], as Aristotle indicates in bk. 2 of the *Posterior Analytics.*[91]

The second part is about the number and distinction of knowable questions. It contains three sections. The first states the number of knowable questions and their customary names. And it is clear that the names are quite properly assigned, except for one. For we ask if [something] is, taking 'if' for 'whether', as when we ask if a man is or infinity is, [and then] we are asking whether a man exists or whether infinity exists. Or we ask what [something] is, as in

90. Aristotle, *Posterior Analytics* II.1.89b23–35. Concerning the difficulties involved in translating these technical phrases see nn. 93, 116, and 119 below.

91. Aristotle, *Posterior Analytics* II.1.89b26–27.

'What is a man?' or 'What is infinity?' Or we ask for what reason [something] is, for example, for what reason a dream is.

But it seems that we do not frame a question by asking how a man is [*quia homo est*] or how a man is risible, but rather whether a man exists [*utrum homo est*] or whether a man is risible. And to this we may respond in several ways, first, that names signify by convention [*ad placitum*]. Therefore, Aristotle or his translators used the name 'how it is' [*quia est*] to refer to the question about being somehow [*de esse tertio adiacente*], whether this accords with common usage or not, just as we sometimes call a line D.[92]

In the second way one may reply that, strictly speaking, we ask about what we want to know. But we do not want to know the expression formulated as a question, namely, 'Does a triangle has three, etc. or not?', for it is not knowable (being rather indifferent with respect to the aspects of the knowable and the not knowable); rather, we want to find knowledge of a true proposition, as for example that a triangle has three, etc. Therefore, we do not want to know *whether* [*utrum*] a triangle has three, etc. but rather *that* [*quod*] a triangle has three, etc.[93] And it is in order to indicate this point that Aristotle named this question in this way, and Grosseteste in his exposition correctly takes note of this explanation.[94]

In the third way one may reply that a dialectician and a demonstrator ask [their questions] differently. For the dialectician asks his questions in the form of a disjunction of both sides of a contradiction, giving the choice to the respondent; this is why he asks whether it is so or not [*utrum sit vel non*]. But the

92. We might do so, for instance, in a geometrical demonstration.

93. This interpretation is not very illuminating as it stands in English, so it is in need of some explanation. To understand the point, first we should know that the Latin conjunctions *quia* and *quod* may be used interchangeably in the construction in which they indicate the beginning of a subordinate clause, the equivalent of an English that-clause, as in 'It is true that Socrates is a philosopher'. For Buridan the function of such a clause is to refer to the corresponding proposition. Thus, in the previous example, 'that Socrates is a philosopher' refers to the proposition 'Socrates is a philosopher'. It is the truth of this type of a proposition, namely, one in which a predicate is attributed to a subject by the mediation of the copula (i.e., *est tertio adiacens,* 'is' occurring as a third constituent besides the two terms), that the question *quia est* asks about. But such a proposition describes precisely how the subject is (namely, that the subject is thus and so; quia/quod S est P), as opposed to saying whether it is *(si S est),* or what it is *(quid S est),* or for what reason it is [thus and so] *(propter quid S est [P]).* It is because of this contrast that *quia est* is translated as 'how it [the subject] is'. Unfortunately, however, this solution in English somewhat obscures the connection between this question and that-clauses, which is quite clear in Latin.

94. Robertus Grosseteste, *Commentarius in Posteriorum Analyticorum Libros,* ed. Pietro Rossi (Florence: Olschki, 1981), p. 292, ll. 100–10.

demonstrator propounds assertively the proposition to be proved, and then it is a question, for it is a dubitable proposition,[95] but the same [proposition] after the demonstration is the conclusion. And to indicate this, Aristotle called this question *how it is* [*quia est*], as being one that is proposed assertively.

But as to the number of questions, according to which four and no more than four questions are posited, it is immediately clear that this should not be understood as applying to the number of questions distinguished individually from one another. For in this way some of them are in me and others are in you, and others in geometry and others in arithmetic. Nor should this be understood as applying to the number of most specific species of the questions, for in this way there are also others in geometry and others in arithmetic; and there are quite a lot in geometry, given that all proved conclusions in geometry have been questions of the *if it is* [*si est*] type, if before being demonstrated they were propounded as ones to be demonstrated. But they are thus said to be four according to four common concepts [*rationes*] suppositing for all demonstrable questions and without overlapping in suppositing for the same things or for the same attributes. And those four types are the ones to which there correspond the four names 'if it is', 'what it is', 'how it is', and 'for what reason it is'.

(2) The second section determines what those concepts are. The first is that which the expression "A question asking about its subject by means of the verb 'is' taken absolutely [*'est' secundum adiacens*]" signifies, or that to which it is subordinated,[96] as in 'whether God is' or 'whether a vacuum is'. And the expression or question for which this expression supposits we conventionally [*ad placitum*] call 'if it is' [*si est*].[97]

The second concept is that which is signified by the expression "A question asking about its subject by means of the verb 'is' as the copula [*'est' tertium adiacens*] in the mode of simple inherence," for example, 'whether a man is a substance'[98] or 'whether every triangle has three angles equal to two right angles'; for 'has' is analyzed as 'is [something] having', in accordance with

95. According to the received definition in medieval logic, a question is nothing but a dubitable proposition (which may be propounded assertively or interrogatively).

96. It is this phrase that makes it clear that *ratio* should be translated as 'concept' here, for subordination, or immediate signification, is precisely the relation that holds between some spoken expression and a corresponding concept.

97. So the "conventional label" *si est* applies, e.g., to the question 'whether God is' or 'Is there a God?', for these are questions that are supposited for by the expression "A question asking about its subject by means of the verb 'is' taken absolutely [*'est' secundum adiacens*]."

98. Since 'substance' is a quidditative predicate of 'man', one would think that this example should belong to the question *quid est,* in accordance with Buridan's subsequent discussion. But perhaps this is just another case where examples need not be verified.

[the doctrine] in bk. 5 of *Metaphysics* that 'to walk' signifies the same as 'to be [something] walking', and 'to cut' as 'to be [something] cutting'.[99] And it is this concept, or the question for which it supposits, that we call by convention 'how it is' [*quia est*].

The third concept is that which is signified by the expression "A question asking by means of the verb 'is' as a copula [*tertio adiacens*] about a predicate of its subject in the mode of a quidditative predicate." That a predicate is asked with 'is' as a copula is clear, for when someone asks 'What is a man?' you reply appropriately if you respond that a man is an animal or that a man is a rational animal, etc., and this expression [uses] 'is' as a copula [*de tertio adiacente*]. And it is this expression, or the question for which it supposits, that we conventionally call 'what it is' [*quid est*].

The fourth concept is that which is signified by the expression 'A question asking for a causal predicate', namely, one that signifies the cause of being of that about which it is asked, whether this is being absolutely speaking [*simpliciter*], with 'is' as an absolute predicate [*secundum adiacens*], as in 'For what reason is there a man?' or 'For what reason is there a dream?', or whether it concerns being with addition [*cum addito*], with 'is' as a copula [*tertium adiacens*], as in 'For what reason is the moon eclipsed?' or 'For what reason does a heavy [body] move downward?' And it is this expression or the question for which it supposits that we call by convention 'for what reason' [*propter quid*]. And it is not necessary to formulate this question always in the form 'For what reason?', but we can ask what is the efficient, or material, or formal, or final cause of man. Therefore, questions such as 'What is a man like?', 'How big is a man?', 'Where is a man?', 'How is he?', etc., pertain to the question 'how it is' [*quia est*]. For each one of these questions asks about an accidental predicate of its subject, which is not a quidditative but a denominative predicate.

But other people neatly distinguish the aforementioned questions as follows. The question 'if it is' asks about being absolutely. The question 'what it is' asks about a quidditative predicate; therefore, I would say that 'whether a man is an animal' belongs to this question.[100] The question 'how it is' asks about a denominative predicate; and the question 'for what reason it is' asks about the cause or a causal predicate, as has been said. And questions about the past [*de praeterito*] and future [*de futuro*] are to be reduced to questions about the present [*de praesenti*], and questions about possibility [*de possibili*] to questions about actuality [*de inesse*].

(3) The third section remarks that these questions can also be distinguished on other bases. For a question either concerns a number of things or does

99. Aristotle, *Metaphysics* V.7.1017a30.

100. See 8.3.2 n. 98.

not do so [*ponens in numerum vel non ponens in numerum*]. And this has to be understood in the following manner: every question asks something about something; if, therefore, that which is asked signifies something other than, or connotes some extrinsic disposition [*aliena dispositio*] in relation to, the subject concerning which it is asked, then such a question we call by convention 'a question concerning a number of things' [*quaestio ponens in numerum*], and if not, then we conventionally call it [*nobis vocare placet*] 'a question not concerning a number of things'[*quaestio non ponens in numerum*]. There are, therefore, two kinds of questions concerning a number of things: one kind is asking about a subject concerning its accidental, or denominative, predicate[s], and then it is called 'how it is'; the other is asking for the cause of some effect or a causal predicate of that [term] which supposits for the effect, and that is called 'for what reason'.

Likewise, a question not concerning a number of things is of two kinds, namely, 'if it is', which asks about being absolutely [*esse secundo adiacens*], and 'what it is', which asks about a quidditative predicate. For although a quidditative predicate may well signify more than the subject, as when, for example, 'animal' signifies more than 'man' does, nevertheless, as far as men are concerned, 'animal' does not signify or connote anything more than does 'man'. For 'to be a man' does not signify or connote anything more than does 'man', except as far as the grammatical modes of signification are concerned, because, if there were only A's, then every A would be for an A to be and for every A to be would be an A. But these points should be discussed in [connection with the] *Metaphysics.*[101]

But we should also note that the members of the previous divisions of these questions can be subdivided, and then the number is increased. For I can pose questions about being as an absolute predicate [*esse secundo adiacens*] or even 'what it is' with respect to an incomplex term, as in 'What is a man?' or 'What is a pug?', or in 'Is there a man?' or 'Is there a pug?', or even with respect to a proposition [*de complexione distante*],[102] as in 'What is it for sleep to be?' or 'What is it for a man to sleep?' Likewise, as far as 'how it is' is concerned, I can ask about a predicate of the category of quantity, or of quality, or of relation, and so on for the other categories. Similarly, with respect to 'for what reason', I can ask about the efficient or material cause; and this again, either with respect to being as an absolute predicate or as a copula, as in 'For what reason is there sleep?' or 'For what reason is the moon eclipsed?'

Again, these questions can be divided in yet another way, in accordance with the distinction of problems in the *Topics,* for some are universal affir-

101. See Buridan, *Quaestiones in Aristotelis Metaphysicam,* bk. 7, q. 4.

102. This is my correction, made on the basis of the critical apparatus.

mative, others universal negative, others particular affirmative, and others particular negative.[103] But questions about hypotheticals are to be reduced to those concerning their categoricals, for either a hypothetical proposition is composed of categorical ones, or they [the hypotheticals] do not come under these divisions and enumerations. And what Aristotle says, namely, "the questions are equal in number to those [items] that we truly know," is to be understood as meaning that in all the aforementioned general modes of questions we have knowable questions, or as meaning that every demonstrable question can become a known conclusion and every known or knowable conclusion can be a demonstrable question to someone who does not yet know it.

8.3.3 On the questions concerning the middle term

(1) Aristotle claims that all the aforementioned questions are questions concerning the middle term [*medium*].[104] (2) For when we ask 'how it is' or 'if it is', we ask if there is a middle term; and when we ask 'what it is' we ask what the middle term is. But Aristotle proves that in the question [asking] 'for what reason [something is]' we ask for a middle term [expressing] what something is [*medium quid est*] as follows: (3) first, in every such question we ask about the cause of the being [of something], either absolutely [*simpliciter*] or with respect to something [*secundum quid*], and that cause is [expressed by] the middle term expressing what the thing is [*quid est*], and this, again, either absolutely or with respect to something; (4) second, in every question [asking] 'for what reason [something is]' [*propter quid*] we ask for a middle term [expressing] for what reason something is, and every such middle term is a middle term [expressing] what something is; therefore, in every question [asking] 'for what reason something is' a middle term [expressing] what something is [*medium quid est*] is asked for.

The terms and point of this third part are obscure and very difficult.

This part contains three sections. (1) The first puts forth the conclusion that every question is a question about the middle term. And this conclusion is clear enough, if we want to talk here about demonstrable questions, which are what we intend to talk about in this treatise; for a question is a dubitable proposition that is turned by a demonstration into a certain and known con-

103. Aristotle, *Topics* II.1.108b34.

104. Aristotle, *Posterior Analytics* II.2.89b36 et seq.

clusion. But that proposition is made known and manifest which is such that, after its middle term has been discovered and appropriately applied to the extremities in a demonstration, it ceases to be a question and becomes a known conclusion. And it is clear that every question is asking about that item whose discovery settles the question or the doubt. Therefore, every question is asking about that middle term or its application to the extremities. Hence, every question is a question about the middle term.

This conclusion is also arrived at in the following way: Let us first suppose that indemonstrable propositions are not questions properly speaking, although they can be vocally propounded in the form of questions; for we do not ask mentally about what we manifestly possess [in our mind]. Second, we assume, as is stated at the end of bk. 7 of the *Metaphysics*,[105] that it is necessary that there be in every question something known to us and something doubtful—for you would not raise a query about a knife if you had no concept of it whatsoever—and it is by means of that which we know that we seek to find out about that which we doubt. Third, we assume that if knowing those things that you know and the way you know them are sufficient to yield knowledge of the ultimate question, then at once, without delay, there follows the knowledge of that ultimate question, and then that question is forthwith settled.

Therefore, as long as you are asking about some ultimate question which is such that it is possible for you to find out about it, then between the things that you know and that ultimate question there remains something unknown to you, which, however, you need to know so as to find out about the ultimate question. And this is what is called the 'middle', i.e., that which has to be sought and found by someone who wants to find out about that ultimate question. And this middle is either a cause or an effect, or a term signifying them, or one of them, applied to the terms of the question. Therefore, it is obvious that someone who is asking about something as an ultimate question also has to ask about some middle by means of which he can find out about that ultimate question.

(2) The second section expounds what [sorts of] middle [terms] we ask about by means of the aforementioned four questions. And this section is clear if we consider that, although we, as well as Aristotle, conventionally [*ad placitum*] call the question about being as an absolute predicate [*de esse secundo adiacente*] the question 'if it is' [*si est*], and that about being as a copula [*de tertio adiacente*] [we call] the question 'how it is' [*quia est*], nevertheless, Aristotle sometimes calls both of them 'if it is', and sometimes he calls both 'how it is' [or 'that it is (thus and so)'].[106] And both are appropriately called 'if it is'—

105. Aristotle, *Metaphysics* VII.16.1040b20–21.

106. See 8.3.2 n. 93.

taking 'if' for 'whether'—for we can ask 'Whether time is' [i.e., 'Whether time exists', or 'Whether there is time'] or 'Whether time is motion'. And both are also appropriately called 'how it is' [or 'that it is (thus and so)'][107], for in propounding that which we intend to demonstrate, we propound both that time is and that time is motion. It is clear, therefore, that he who is asking 'if it is' is asking about the middle [relating to] whether [the thing] is, namely, he asks about the middle producing the knowledge of whether [the thing] is, and in the same way he who is asking 'how it is' is asking about the middle [relating to] how [the thing] is, i.e., about the middle producing the knowledge of how [the thing] is. Consequently, he is asking about the middle [relating to] 'if it is', since we have said that the question 'how it is' is appropriately called 'if it is'.

But, again, it is clear that the question 'what it is' asks about the middle [relating to] what [the thing] is, i.e., it asks about the middle producing the knowledge of what [the thing] is, and the question 'for what reason it is' asks about the middle [relating to] for what reason [the thing] is, i.e., it asks about the middle producing the knowledge of the reason why [the thing] is. Something more is stated in this section, however, for it is also stated that the question 'for what reason' not only asks about the middle [relating to] for what reason [the thing] is, i.e., about the middle producing the knowledge of the reason why it is, but also about the middle [relating to] what [the thing] is. But this is doubtful. Therefore, to prove this, the two subsequent sections are provided in the form of two arguments proving this point.

(3) And because of the first of these arguments, which is provided in the third section, we have to note that when I say 'the cause of being', I may understand this in two ways: either [as concerning being] absolutely [*simpliciter*] or with qualification [*secundum quid*]. By 'being absolutely' I mean 'being as an absolute predicate' [*esse secundo adiacens*], and by 'being with qualification' I mean 'being as a copula' [*esse tertio adiacens*]. When, therefore, I ask for what reason a man is, then I ask about the cause of being of a man without qualification. But when I ask for what reason a man is risible, then I do not ask about the cause of being of man without qualification, but the cause of his being risible; and thus the major [premise] of this argument is clear enough. But when in the minor it is stated that this cause is the middle saying what a man is, I understand this in such a manner that, in this broad manner of speaking, we call a 'definition saying what a thing is' not only a purely quidditative definition, but also a causal definition. And every cause that is sought in a demonstration *propter quid* can and should belong to the causal definition

107. See ibid.

of the thing concerned in the question; and this causal definition is the appropriate middle in a demonstration *propter quid.* And 'either absolutely or with qualification' was added [just now] because if I define 'man' or 'triangle' absolutely by means of a causal definition, then that is the appropriate definition to prove for what reason a man is, without addition; but if I define them by means of a causal definition not absolutely but with addition, as in defining 'man' by 'being risible', and 'triangle' by 'having three, etc.', then that definition is appropriate to prove for what reason a man is risible, or for what reason a triangle has three, etc.

On the basis of these points the second argument, which was given in the fourth section, may also be clear. And Aristotle, by way of explaining it, also provides the following claim: "for it is clear that in all these cases 'what something is' [*quod quid est*] and 'for what reason it is' [*propter quid est*] are the same,"[108] which is to say that every causal definition signifies the cause on account of which the thing signified by the definitum is.

8.3.4 The constituents of a demonstration

(1) Since we intend to discuss the things to be realized before [*praecognoscenda*] the demonstrative knowledge of the conclusion, we shall show first what [kind of] and how many [things] have to constitute the demonstration [of the fact] that an attribute applies to a subject. (2) And it is clear, first, that it has to contain the subject, the attribute, and the middle term. (3) Second, it has to contain a conclusion consisting of the subject and the attribute, and if this conclusion was propounded [interrogatively] earlier, then it constituted the question. (4) Third, it has to contain two premises, one consisting of the middle and the attribute and another consisting of the subject and the middle. (5) Fourth, these premises have to be arranged in a syllogistic figure and in the appropriate mode, so that the conclusion should necessarily follow from the premises. (6) The premises and their conclusions are usually called the 'matter' of the demonstration, whereas their arrangement in the syllogistic figure and the appropriate mode is usually called its 'form'.

The fourth part distinguishes the integral parts of a demonstration. And it contains six sections. (1) The first puts forward the purpose of the part and the

108. Aristotle, *Posterior Analytics* II.2.90a14–15.

reasons for this purpose; and it is quite clear. And it deals in particular with the demonstration of an attribute about a subject, for it is this kind of demonstration that is sought more often in the *propter quid* demonstrative sciences, and the points made in connection with this kind of demonstration may make manifest what should be said about the others.

(2) The second section distinguishes the terms that can be the subjects and predicates in such demonstrations. And the whole of this is clear on account of the fact that a demonstration is a syllogism. There are, however, other demonstrations in which the terms are the subject and the predicate of the conclusion along with the middle, but without that predicate's being related to that subject as the attribute of its subject.

(3) The third and (4) the fourth sections distinguish the propositions of which a demonstration consists, these being the conclusion and the two premises consisting of the aforementioned terms. And the whole [text] is clear enough.

(5) The fifth section shows that those terms have to be arranged into a syllogism. And this is so because every demonstration has to be a syllogism, as will be claimed later.

(6) The sixth section shows which of the aforementioned things enters into the constitution of a demonstration in the manner of matter and which in the manner of form. And the section is clear. For there is no need to discuss the real or nonreal distinction between such matter and such form. But in the end one can express the situation just as we would in the case of a house when we say that the matter of the house consists of the stones, beams, and walls, whereas its form is the composition and arrangement of these. Or one may say that just as in a proposition the subject and the predicate are like matter and the copula is like form if the proposition is categorical, so also in a demonstration (which is a hypothetical proposition, as we have claimed concerning the syllogism elsewhere),[109] the premises and the conclusion are like matter, whereas the conjunction connecting them in producing the hypothetical proposition is like the form, as is the word 'therefore' or its likes in a spoken demonstration and the concept corresponding to it in the mental demonstration.

109. See 5.1.3.

8.3.5 On the things of which one should have precognition

(1) Let us say, therefore, with Aristotle, that every intellectual teaching [*doctrina*] and discipline [*disciplina*] derives from some preexisting cognition.[110] (2) We have to have preexisting cognition in two ways in demonstrative doctrines, for of some [things] we have to have [the cognition of the fact] 'that they are [true]' [*quia sunt*],[111] as in the case of axioms [*dignitates*], and of others [we need the cognition of] 'what it is that is expressed by the name' [*quid est quod dicitur per nomen*], as in the case of attributes, and of others both, namely, 'what it is' [*quid est*] and 'that it is' [*quia est*], as in the case of subjects. (3) But it is not necessary in every demonstrative syllogism to have the precognition that the subject of the conclusion exists (for indeed this is what we learn by a demonstration in response to the question 'if it is' [*si est*]), (4) but it is necessary to have the cognition of this in every science as a whole concerning the primary subject of that science.

The fifth part shows what are the things that we have to pre-cognize regarding the aforementioned constituents of a demonstration before we can gain knowledge of the conclusion by means of the demonstration. And it contains four sections.

(1) The first presents a property which is common to all doctrines and disciplines. We should note that it is the same habit [*habitus*][112] that is called 'doctrine' and 'discipline', but these names differ in their concepts, for [this habit] is called a doctrine insofar as it is acquired from a teacher [*doctor*], and it is called a discipline insofar as it is received by a disciple [*discipulus*], in the same way as the same motion is called 'action' insofar as it comes from an agent and 'passion' insofar as it is in the patient, as is stated in bk. 3 of the *Physics*.[113] So in the most general sense every cognition that is thus acquired from someone else is said to be a 'doctrine'. Now some of these are sensory and some are intellectual. The sensory applies when a jester [*ioculator*] trains his dog to sit or to dance, or when a mother talking often to her baby teaches it her lan-

110. Aristotle, *Posterior Analytics* I.1.71a.

111. For the justification of this translation of this phrase here see 8.3.5 nn. 116, 119.

112. 'Habit' (*habitus,* lit., 'something had') is to be taken in the sense of a quality or capacity had by a subject, such as the sight of an animal or the knowledge of a person, as opposed to a privation (*privatio,* a deficiency, a lack), which would be the lack of this quality in the same subject, as would be the blindness of an animal or the ignorance of a person.

113. Aristotle, *Physics* III.3.202a31–33.

guage; but this is not what Aristotle intends [to talk about], and neither do we, in the present [discussion of the] art of demonstration; this is why [in the text] reference was made to 'every *intellectual* teaching and discipline'. And since every such [doctrine or discipline] comes from some previous sensory cognition, this is how the proposition put forward in the first section can be proved.

Now, in that proposition Aristotle still intended to talk more strictly about doctrine and discipline; therefore, he is not alluding to just any sort of intellectual cognition but to the cognition of the truth of some proposition, which, when it is first propounded, is doubtful to us, or appears to be false, but of which a teacher then shows us the truth. And since the teacher cannot achieve this except by means of a demonstration from a premise or premises that conclude to the proposition in question, and the premises have to be known before the conclusion can become known by means of them, therefore every doctrine has in this way to come from some preexisting cognition, namely, from the cognition of the premise or premises. Again, a proposition that is thus doubtful when it is first propounded and whose truth is manifested later is properly called a 'question'. And it was stated in the third part of this chapter that in each of our questions something is known to us and something is doubtful, and by means of that which we know beforehand we strive to find out about that which we doubt. And when this has been found with the help of the teacher who shows us the middle by means of which [what is sought] can be found and how [the middle] applies to the extremities, then doctrine is the outcome. Therefore, this is also how doctrine derives from some preexisting cognition.

(2) The second section sorts out the precognitions appropriate to the demonstrative sciences. Now it is commonly stated, in accordance with Aristotle, that in demonstrative sciences there are two [sorts of] precognitions prior to the knowledge of a conclusion by means of demonstration, namely, 'what it is' [*quid est*] and 'that it is [true]' [*quia est*]. But in saying this you should take 'what it is' and 'that it is [true]' not in the nominative but in the genitive case. For the precognitions are those of 'what it is' and of 'that it is [true]' concerning the subject, axiom, and attribute, since that which has to be cognized beforehand is that which is precognized and of which we have the precognition. And since Aristotle says: "And one has to precognize in two ways, for in some cases that they are [*quia sunt*], etc.,"[114] and since there are two precognitions in number, we should understand this [namely, the way they are enumerated] analogously to the enumeration of the knowable questions provided in the second part of this chapter.

114. Aristotle, *Posterior Analytics* I.1.71a10.

When, therefore, we declare that it is necessary to have the precognition of 'what it is' about the subject and the attribute, we should not understand by 'what it is' a quidditative or a causal definition. For those are often [just what is] doubtful and has to be sought and demonstrated; therefore, taken in that way [to find out 'what it is'] was the essence [*quid est esse*] of the question.[115] But by 'what it is' we should understand what it is that is meant [*dicitur*] by the name, and this should be precognized not only with respect to the subject and the attribute, but rather universally, with respect to every significative term that we intend to use in the demonstration. For if the disciple does not know the significations of the terms, he will not be able to understand the teacher who aims to demonstrate something for him. Also, when we say that where an axiom [*dignitas*] is concerned we should precognize that it is [true] [*quia est*],[116] we mean here by 'axiom' an indemonstrable premise of the demonstration.

Now by extending the name 'axiom' we can call all propositions that become the premises in the demonstration of further conclusions 'axiom' with respect to those conclusions, although they should not be called axioms absolutely and strictly, except when they are indemonstrable. Since, therefore, the premises have to make manifest the truth of the conclusion, it is necessary thus to precognize and know the axioms before the cognition of the truth of the conclusion. And this is what we mean when we say that it is necessary to precognize with respect to an axiom that it is, namely, that it is true [*quia est vera*],[117] or that things are as it signifies, in the sense expounded elsewhere.[118]

Furthermore, when it is said that about the subject one should precognize 'that it is',[119] since that subject is a term [as opposed to a proposition], by this we mean that one has to precognize that the verb 'is' as an absolute predi-

115. *Ideo sic dictum fuit quid est esse quaestionis.* This is a rather obscure phrase, but I take it that Buridan's point is that when we wish to demonstrate a quidditative or a causal definition, then these definitions certainly cannot be known beforehand, since they constitute precisely the essence (the point) of the question to be answered by the demonstration.

116. As will be clear later, Buridan does not intend here the technical sense of *quia est,* which I translated above by 'how it is', for in this latter sense it is precisely what we want to know in a demonstration, namely, how the subject is, i.e., whether the attribute attributed to it in the conclusion does indeed apply to it. Rather, what has to be precognized here is *that it* (the axiom in question) *is true.* See 8.3.5 nn. 111, 119.

117. See Aristotle, *Categories* 5.4b8; *Metaphysics* V.7.1017a31–32.

118. *Sophismata,* chap. 2, conclusion 14.

119. Clearly, since how the subject is (whether the attribute attributed to it in the conclusion does indeed belong to it) cannot be *pre*cognized about it (for this is precisely what the demonstration has to establish), the phrase *quia est* cannot be used by Buridan in the sense in which I translated it by the phrase 'how it is'. This is the explanation of the apparently "inconsistent" translation indicated above, in 8.3.5 n. 111.

cate is true of this term taken significatively. For example, if magnitude is the primary subject in geometry, then one has to precognize magnitude, and [the fact] that it is, before we can know any geometrical conclusion. For as is stated in bk. 6 of the *Metaphysics*,[120] no science should prove whether its subject matter is or is not [*si est aut non est genus circa quod versatur*], nor indeed, what it is; rather, the sciences either take this cognition from the senses or they assume it from a higher science.[121]

(3) The third section as well as (4) the fourth explain which type of subject requires the precognition of the fact that it is and which type does not. And it remarks that 'subject' is taken in two senses that are relevant here; in one sense something is said to be the subject of the proposition, namely, that of which the predicate is predicated, and in the other something is called the subject of the science. And then the third section quite clearly shows that, speaking about the subject of the proposition, it is not necessary to precognize in every demonstration that the subject of the conclusion is; indeed, this is what is sought after and demonstrated in response to the question if it is [*si est*]; exactly how that happens will be clarified later.

But concerning the subject of a science we should note that I do not here intend to talk about the subject in which the science [or knowledge, *scientia*] inheres. For every [item of] human knowledge has the soul as its subject in this sense, and concerning this nothing needs to be precognized in geometry. Rather, we here call the 'subject of science' that genus which primarily comes within the purview of anyone who works in this science. And this is said to be 'primarily' [involved], because he does not consider anything else [in this science], except insofar as it is related to this [genus], as parts, as attributes, as principles, as objects, as attributes of the parts or of other attributes, etc. And this is usually called the 'object' and the 'subject' and the 'genus'.

Thus, it is called the 'object' with respect to the intellect that primarily considers it in this science, and it is called the 'subject' with respect to the primary and principal attributes [of this genus] belonging to this science.

But it is called a 'genus' in one of two ways. The reason for the first of these is

120. Aristotle, *Metaphysics* VI.1.1025b16–18.

121. For example, geometry does not define magnitude but takes over its definition from metaphysics, which determines that it is a certain accident of material substance, namely, its continuous quantity. But the distinction between substance and accident in metaphysics cannot be taken over from a higher science, since metaphysics is the highest science (with respect to the generality of its proper subject, which is being as such). Therefore, the intellectual cognition of this distinction does not presuppose any higher intellectual cognition but only the cognition of the senses, as will be explained later in more detail in connection with the cognition of indemonstrable principles.

that such a subject usually has several species under it that are considered by this science, as for example 'magnitude' is posited to be the subject of geometry and has under itself as its species 'body', 'surface', 'line', etc., which are considered in geometry. The other way is that according to which the subject is usually called the 'genus' of its attributes. These two ways of talking about 'genus' are discussed by Aristotle in bk. 5 of the *Metaphysics,*[122] along with two earlier ways, when he says: "something [is called a genus] in the way in which 'surface' [is the genus] of figures, or 'solid' is of solids" and "Furthermore, as that which is first among the accounts [*rationes*]," i.e., quidditative definitions, "and is predicated essentially [*quod primum inest quod dicitur in eo quod quid est*]." And it is this kind of subject that Aristotle calls 'genus' in bk. 4 of the *Metaphysics,*[123] where he says that every sense that is one and every science that is one is related to one genus, as when grammar, being one, considers all utterances; and also in bk. 1 of the *Posterior Analytics,* where he says, "One science is that which is concerned about one genus, etc."[124]

That in every such science one has to assign such a first and single subject will be stated in another part.[125] Also, that of such a subject it is necessary to presuppose in some other science that it is [*quia est*] can be known by induction, for neither does metaphysics demonstrate that being is, nor does physics demonstrate that mobile being is, nor does geometry demonstrate that magnitude is, nor does arithmetic demonstrate that number is. Again, such a subject is that which a science like this primarily and principally considers; but nobody would want to toil to establish a comprehensive science about something that he does not believe is or at least was or will be. Furthermore, [in such a science] one should consider all other things insofar as they are reduced to such a subject, and nobody would want to reduce beings to some non-being, nor terms suppositing for something to a term that he does not believe to supposit for anything.

First Doubt

But you might say: "Couldn't I have such a comprehensive science about the vacuum, or about the term 'vacuum', although there is no vacuum?" and again "one [certainly] could have such a science about the rose and about its

122. Aristotle, *Metaphysics* V.28.1024b1–2, 1024b4–5.

123. Ibid., IV.1.1003b20–21.

124. Aristotle, *Posterior Analytics* I.13.78b36–79a16.

125. See 8.3.6.

parts and attributes, and yet not lose it even if there were no roses at the moment, just as we do not lose our knowledge about lunar eclipses, even if there are no lunar eclipses for a long time."

The brief response to the first objection is that no science can consider the term 'vacuum' taken significatively for its primary and principal significate, but instead it has to consider primarily and more principally place, for that science cannot contain the concept of vacuum, nor the nominal definition [*quid nominis*] of the term, without bringing to bear the concept of place; for the concept of a vacuum is a complex concept consisting of the concepts of place and body, as has been said elsewhere.[126]

To the second objection we should reply that in demonstrations we do not use the verb 'is' restricted to the time of this hour or of this day but [with respect to] an infinite or indefinitely long present time. But this will be discussed at length in the sixth chapter of this treatise.[127]

Second Doubt

But it is still doubted whether we should have the precognition that it is [*quia est*] with respect to the attribute, in the same way as we should have it about the subject. And I say that in some cases this is precognized as obvious to the senses, but not in every case, for although we know that there is a continuum, which has the attribute of being divisible to infinity, it is still a dubitable question whether it is indeed divisible to infinity. Indeed, not even all the subjective parts of the primary subject should be presupposed to exist. For although motion and time and infinity are the subjective parts of 'being', which is the primary subject of metaphysics, someone may nevertheless doubt whether motion or infinity or time exists, and he has to demonstrate in metaphysics that it does.

One need not have doubts concerning the points made above because of Aristotle's words, who in bk. 1 of *Posterior Analytics* says:[128] "Nothing prevents some sciences from ignoring some of these [recommendations], as for example not assuming that the genus exists, if it is obvious that it does, . . . and not assuming what the attributes signify," because this is well known. For by these words Aristotle wanted to say that if the aforementioned things are

126. See 4.2.4.

127. See 8.6.1; here I corrected the text to match the actual numbering. (The critical apparatus gives the second, the fifth, and the seventh chapters as possible references, but it is actually the sixth that contains the point referred to by Buridan here.)

128. Aristotle, *Posterior Analytics* I.10.76b16–20.

not manifest and commonly accepted by everyone, it is useful to assume them at the beginning of one's books, not only mentally but also by describing or pursuing them, or even by explaining them, if they are in need of some explanation. If, however, they are evident to everyone, then, although they are mentally recognized, it is [still] not unacceptable to discuss them as a preliminary exercise at the beginning of a treatise before going on to demonstrate the conclusions.

8.3.6 What constitutes the unity of science

(1) Since therefore a large body of knowledge consisting of a number of reasonings, divisions, definitions, demonstrations, and conclusions is what we call one science, such as metaphysics, physics, or geometry; and since these are not said to be one on account of continuity, or the inherence of one in another, or because of the subject in which they are aggregated, it is necessary to say that such a large body of knowledge is one on account of the unity of one of those things that this science considers, to which the others, insofar as they are considered in this science, are ordered and related [*habent ordinem et attributionem*],[129] just as an army is said to be one on account of the relationship of all its other members to one prince or commander; therefore, (2) we should examine what that one thing is on account of the unity of which such a science is said to be one.[130] (3) But this is not some complex principle, as an axiom, for there are many of these in the same science that are not reducible to each other, (4) nor is it a demonstrative middle, for the same reason, (5) nor is it a conclusion, nor some attribute, for they are many and posterior to the premises and subjects. (6) Therefore, it has to be the primary genus or subject that is proper and adequate to that science. And this is the conclusion of Aristotle, in bk. 1 of the *Posterior Analytics,* in the chapter [that begins]: "One science."[131]

Since sciences are said to be diverse on account of the diversity of what they consider, and we have already listed a number of things that are prin-

129. See 8.3.6 n. 132.

130. In accordance with Buridan's later comments, I have moved the section number to the conclusion from the first semicolon of this long sentence, where it originally appeared in the critical text.

131. Aristotle, *Posterior Analytics* I.28.87a38.

cipally considered by demonstrative sciences, it seems useful in the present sixth part to have some discussion of the unity and universality of sciences. The sixth part has six sections.

The first, which is quite large, proves the conclusion that a science that contains several demonstrations and conclusions has to be said to be one on account of the unity of one of the things that are considered by this science. And for the correct understanding of this point we should note that we do not intend to talk here about the unity of some simple piece of demonstrative knowledge [*scientia simplex demonstrativa*], but rather about the unity of science consisting of a number of such simple pieces, in the way the whole of geometry is composed of the single pieces of knowledge [*scientiae partiales*] we have of all or several geometrical conclusions.

Since, therefore, each of these simple pieces of knowledge is actually one piece of knowledge, and each further conclusion is yet another such [simple piece], how, then, can geometry, consisting of all these single pieces of knowledge, be said to be one? It is not said to be one because it is one properly speaking, just as neither a house nor an army is properly said to be something one; for several things are not said to be something one absolutely and properly speaking, except on account of continuity if they are apt to be continuous, as the parts of a line are one line and several parts of water are one [body of] water, and as several degrees of heat are one heat (for they are imagined to have the continuity of intensity, even as the parts of a magnitude have the continuity of extension). [Nor is it said to be one] on account of the mixture of the degrees of contrary forms, as some degrees of heat and some degrees of cold would be one [quality of being] lukewarm, and also as some degrees of whiteness and some degrees of blackness would be one medium color; or on account of the inherence of one in the other, as form and matter are one substance subsisting by itself, namely, one animal, one stone, or one [body of] air.

But two single or simple pieces of knowledge [*duae scientiae partiales sive simplices*] of distinct conclusions are one in none of these ways, nor do they constitute one science. But such a science, as in the case of the whole of geometry, does not seem to be one only on account of some accumulation or aggregation in the same place or subject, for in this way two geometrical conclusions are no more one than are one geometrical and one moral or metaphysical conclusion; therefore, those two geometrical conclusions would no more be said to constitute one science than one geometrical and one moral or metaphysical conclusion, and this is false. And there does not appear to be some tying or gluing together or some other sort of reason why all geometrical conclusions are said to be one science, apart from the fact that all geometrical conclusions have some order or relationship [*ordinem et attributionem*] to something unitary in their import, to which the moral or metaphysical conclusions are not

so related in their import, and vice versa. Therefore, by the same token, the conclusion posited in this section is inferred validly.

(2) The second section, therefore, proposes that we consider what that one thing is whose unity, because of the relationship of the others to it, accounts for such a science's being said to be one science.

(3) The third section rejects an opinion, namely, the opinion of those who say that the one thing in question is some one complex, first principle proper to that science, on which the others depend, for the whole aggregate has to derive its unity from something primary rather than from anything else, and the relationship of attribution [*attributio*] should point from the posterior ones to the prior ones rather than conversely; but the subject is not first, nor is some attribute; but the first principles are prior; therefore, [a science describes its unity from its first principle].[132] But this opinion is not true. For in such a science there is not a single indemonstrable principle to which all the others could be reduced; rather, there are as many as there are demonstrated conclusions, as will be declared later.[133] Furthermore, one of these is not reduced to another of these [principles], except perhaps because they are all reduced to some further one [principle], for none of these can be proved by means of another. But, again, the most common principles are metaphysical ones,

132. The 'attribution' alluded to here is part of the common medieval Aristotelian theory of analogy by attribution. A common term is said to be predicated analogically in this way when it is predicated of something not in its strict sense but in some secondary, modified sense on account of this thing's relation to something of which this term is truly predicable in the strict sense. For example, 'healthy' in the strict sense is predicable only of some living body, such as an animal or a plant. But by this sort of analogy it can also be predicated of nourishment, because nourishment can be said to be healthy since it is the cause of the health of the living beings in question. In such cases that (kind of) thing of which the term can be truly predicated in the strict sense is called the first analogate and those (kinds of) things of which the term can be predicated in such a secondary, analogical sense are said to be the secondary analogates of this term. It was also said that the secondary analogates had some "attribution" or "proportion," i.e., some relation to the first, but not conversely, because the term could be applied to the secondary analogates only on account of the relation that they had to the first analogate, but not conversely. For example, food has the attribute of being healthy only because it causes or promotes the health of an animal, but not conversely, i.e., an animal is not called healthy because of its relation to some food. In the same way, the point of the argument is that several pieces of knowledge should have the attribute of belonging to a certain science on account of their relation to something that primarily and strictly belongs to that science, but not conversely. So, e.g., several conclusions, subjects, and attributes should, according to this argument, have the attribute of being geometrical on account of their relation to what is primarily and strictly geometrical, namely, some first geometrical axiom, but not conversely.

133. See 8.5.2.

and they descend to the specific sciences by means of their diverse appropriations. Therefore, the diverse sciences are not said to be diverse on account of the diversity of these principles, but rather on account of the other distinct principles of those sciences; for to these principles diverse appropriations are added that diversify those principles.[134]

But these complex principles are not even the first among the items considered; indeed, the terms from which they are composed are prior. Therefore, with regard to the unity of science, Aristotle in bk. 1 of the *Posterior Analytics* reduces complex principles to the subjected genus when he says:[135] "one science is distinct from another if their principles are not derived from the same [further principles], nor are the principles of the one [derived] from those of the other; and this is clear when one comes to the indemonstrable principles; for those have to be in the same genus as [the conclusions] that are demonstrated," i.e., if they should constitute one science. And at the end of the chapter he says:[136] "Principles are of two sorts: for some are those from which [*ex quibus*] [science proceeds] and some are those about which [*circa quae*] [science makes its claims]"—the axioms and the subjected genera, respectively—"those from which, therefore, are common, and those about which are proper, as are number and magnitude," i.e., number in arithmetic and magnitude in geometry.

(4) The fourth section eliminates another opinion, namely, the opinion of those who say that such a science is said to be one on account of the unity of the first demonstrative middle, namely, that of the first demonstration. And this opinion has some likelihood for the reason that the same conclusion, namely, one that has the same subject and the same attribute, such as the conclusion that the earth is round, pertains to different sciences, namely, to natural science and to astronomy, insofar as it is demonstrated by means of different middles, as is clear in bk. 2 of *On the Heavens* and in the treatise *On the Sphere*.[137] Again, it is said in bk. 1 of the *Posterior Analytics*[138] that demon-

134. For example, the first metaphysical principle, 'Nothing can both be and not be at the same time, etc.', can be "appropriated" by arithmetic and geometry by adding to the specific axioms of these sciences (among others) the principles: 'No number can both be even and not be even' and 'No plane figure can both be triangular and not be triangular', respectively. And then, from the definitions of the technical terms, the axioms, and these "appropriations" one can prove that no number can be both even and odd, that no plane figure can be both triangular and quadrangular, etc.

135. Aristotle, *Posterior Analytics* I.28.87a40–b3.

136. Ibid., I.32.88b27–29.

137. Aristotle, *On the Heavens* II.14.297b21; L. Thorndike, *The Sphere of Sacrobosco and Its Commentators* (Chicago: University of Chicago Press, 1949), pp. 81–83.

138. Aristotle, *Posterior Analytics* I.12.78a15–17.

strations are augmented not by the addition of new middle terms but by subsuming terms under the same middle [*in post assumendo*], or laterally [*in latus,* i.e., by subsuming under the extremes], as if in a single science that has a first unique middle, although it contains several demonstrations and conclusions.

Nevertheless, neither is this opinion to be maintained. For although several minor [terms] can be subsumed under the same middle [term], and under those yet several others, so that one may multiply the demonstrations originating from one middle [term] and one premise consisting of this middle and the other extremity of the first demonstration in that order, nevertheless, not all demonstrations of such a science thus depend on one middle and one premise. For example, there is no single premise and no single middle into which one could resolve the demonstration of Euclid's first theorem and that of the conclusion that all four proportional quantities are proportionally commensurable; and the same goes for many other cases.

Again, the first to which everything else should be reduced has to be precognized, but the demonstrative middle is not one of the things first cognized. Indeed, once we have cognized the subject and the attribute with respect to their nominal definitions [*quid nominis*], and also the subject with respect to [the fact] that it is [*quia est*], we often still do not know but rather we seek the middle, and often we find it only with difficulty, and all this coheres with what we have said to the effect that every question is a question of the middle.

The arguments in favor of the opinion now in question are of no use either. For if the same conclusion, e.g., that the earth is spherical, is proved in diverse sciences, this does not arise from the diversity of the middle [terms] but on account of reducing the earth in accordance with its various considerations to the first subjects of these diverse sciences. For the earth in one way is considered as absolutely heavy and moving naturally toward the center of the world, and thus it is reduced to the first subject of natural philosophy [namely, physics], which is movable being or motion. In another way it is considered regarding its position relative to the heavens, insofar as it is in the middle as the center, and thus is reduced to the first subject of astronomy, which is heavenly magnitude, or something such; therefore, in this way it comes under astronomy, and an astronomical middle applies to it by means of which it is proved to be spherical.

For it is not absurd [to contend] that the same term, in accordance with its diverse considerations, should belong to diverse sciences on account of its reduction to their diverse first subjects, nor indeed that that term can be the first subject in one science and a part or an attribute of the subject in another. For example, quantity considered under the concept of measure is not resolved into its superior or into another subject, but rather is the first subject of mathematics. But considered insofar as it is a being, [quantity] belongs to

metaphysics; and for this reason, as such, it is reduced to the subject of metaphysics, which is being. Therefore, the mathematician does not have to know what sort of thing quantity, number, or magnitude is, but only the metaphysician considers this. But if quantity, number, and magnitude are considered insofar as diverse magnitudes and figures apply to diverse concepts, motions, or natural operations, then they come under physics, for in this way they are considered in relation [*in attributione*] to movable being, which is posited as the first subject of natural science. The other objection, which concerns the augmentation of demonstrations, has already been touched upon, and will be discussed in more detail later.

But the question still remains how such a subjected genus can be said to be proper and adequate to the entirety of a given science, when it does not seem to be assumed in any demonstration or conclusion of that science. My reply is that it is not said to be proper to this science because of convertible predication or because it is formally assumed in any demonstration or conclusion of that science. But it is said to be proper and adequate to that science because this science neither goes beyond the consideration of this subject and of the things that are related to it under the concept under which the first subject of this science is posited, nor does it fail to consider them. For it considers the subject and its parts and its attributes and its principles and everything else that is *per se* related to it under the concept under which the first subject is posited there, and with reference to nothing else.

Therefore, when Aristotle, in bk. 1 of the *Physics,* considers a term that is superior to motion or movable being, and to the multitude of beings, as against Parmenides and Melissus, this does not come about by virtue of his having [*habitus*] [the knowledge of] natural science, but by virtue of his having [the knowledge of] metaphysical science and by means of the science of metaphysics, as he himself states in the same passage.[139] And when in connection with bk. 2 of *On the Soul*[140] we define the soul as being the first substantial act of a physical body, we also do this by exploiting our knowledge of first philosophy, to which these terms belong, and not with reference to physics. Hence we should note that no science can define its own subject, except by acting in the capacity of [*induendo habitum*][141] a superior science, for the first part of the definition has to exceed that which is defined.

(5) The fifth section rejects two other points, which perhaps some cavilers might bring up, one being that it is on account of the unity of an attribute, and the other being that it is on account of the unity of a conclusion that a science

139. Aristotle, *Physics* I.2.185a17–20.

140. See Aristotle, *On the Soul* II.1.412a27–28, 412b5; 2, 414a27–28.

141. Literally, "putting on the clothes of."

would be said to be one. But this is not reasonable, since neither of these is what a science primarily intends to consider, and since, while the subject remains one and the science remains one, the conclusions that are not reducible to each other are multiplied, as has been said, and so also the attributes, as for example being insofar as being has several proper attributes convertible with it, such as 'same or diverse', 'prior or posterior', 'cause or effect', 'contingent or necessary'. It should indeed be conceded, however, that the unity of a simple piece of knowledge [*simplicis scientiae*] requires the unity of the conclusion.

(6) The sixth section infers from the previous points that such a science is said to be one on account of the unity of the first subjected genus of that science. Some moderns, however, because they do not consider this carefully and only take into account a few things, lightly assert that in such an extensive science one should not look for one proper subject but that there are as many [subjects] as there are conclusions with different subjects. But these people are unable to make principled distinctions [*artificialiter distinguere*] between the sciences, nor can they say why this conclusion belongs to geometry and that does not but [belongs] rather to medicine. And the reason for their failure is that they do not distinguish between the subject of a proposition and the subject of a science or of an attribute.

8.3.7 Whether the premises are known temporally prior to the conclusion

(1) But some people held that we do not know the premises before we know the conclusion, as this view is imputed to the Platonists. (2) But we do not hold this opinion; rather, we claim that we necessarily have to know the premises before we would know the conclusion. For the knowledge of the conclusion comes to be in us by means of the knowledge of the premises; and that by means of which something else comes to be is naturally prior to that which comes to be. (3) And we know the major earlier in time than the conclusion, but when we add the minor to the known major, then we know it simultaneously with the conclusion in time, although earlier by nature.

The final part shows how we precognize the premises before the conclusion. And in connection with this we should note that a proposition formed in the mind is a certain complex cognition [*notitia complexa*], and we shall not speak about this here, for we can have the conclusion to be demonstrated

formed in our mind even before we have any of the premises in mind. Indeed, teachers usually propound conclusions to be demonstrated in this way before they demonstrate them. But this cognition is not knowledge; rather, knowledge is the certain and evident assent supervening on [*superveniens*] the mental proposition, on account of which we assent to it with certainty and evidentness. When, therefore, this cognition formed in the mind is doubtful to us, and the intellect is not determined by its nature to assent to it with certainty and evidentness, it is necessary, if we are to so assent to it, that the intellect be determined to do so by means of other propositions entailing this one and to which it assents in this sort of way. And thus the intellect has to assent earlier to those premises than to the conclusion, and this amounts to knowing the premises prior to the conclusion.

This part, therefore, contains three sections. (1) The first propounds the opinion contrary to ours, in whose support four arguments are related, which, or some of which, are usually attributed to Plato. According to the first, Plato says—just as we do—that God in generating man creates also the human intellect; but since God is the most perfect, best, and omnipotent agent, whose power nothing can resist, it is reasonable to claim that He produces a perfect effect, if He produces and creates it *per se.* But the human intellect is not created perfect, unless it is created replete with all the virtues and knowledge. Therefore, the intellect existed in this way from the instant of its creation, whence it did not know the premises earlier than the conclusion [since all were known at once]. And when Plato was asked: "Why then does mankind need to learn and study?" he replied that the intellect, oppressed and buried by the burden of flesh, could not exercise the works of knowledge, and so it forgot them and could not use that knowledge anymore except by exercising itself in studies and demonstrations and resorting to memory and reminiscence.

His second argument was that if the intellect did not precognize the conclusion before the demonstration, then it would follow that, when the conclusion is presented and offered to it in a demonstration, then the intellect would no more embrace [*caperet*] the conclusion in assenting to it than it would its opposite, if that were offered to it; and this is false. And he proves the consequence by the example of the fugitive slave sought by his master. If the master had never known the slave before, he would [be] no more [disposed to] apprehend [*caperet*] the slave, even if he ran into him, than he would any other [person] who was likewise unknown to him before.[142]

142. Unfortunately, both the argument and the example are somewhat obscure, but on the basis of Buridan's subsequent reply its point can be reconstructed as follows. If the intellect is not predisposed to assent to the conclusion of a demonstration, then, by the same token,

The third argument was that there are no sufficient causes of some effect without the occurrence of that effect, for once the sufficient causes are posited, their effect is also posited. But the sufficient causes of the knowledge of the conclusion are the [acts of] knowing the premises, along with the agent intellect and the potential intellect, etc., which have already been posited. Therefore, having posited the [acts of] knowing the premises, the knowledge of the conclusion is posited at the same time, and not later.

The fourth argument was this. Consider the following [143] reasoning: 'Every pair is an even number; the coins in my purse are a pair (which I prove by showing them); therefore, the coins in my purse are an even number'. Then I show that you had known this conclusion even before it was proved by this reasoning; for of every pair you knew beforehand that it was an even number, and the coins in my purse are a pair, as has been proved by showing them; therefore, of the coins in my purse you knew beforehand that they were an even number. And this is a self-evident reasoning, for it is a syllogism in the first figure.

We should only lightly touch on these arguments, for they do not belong to logic, except for the fourth. As to the first argument, therefore, it is clear that, speaking in physical terms [*loquendo naturaliter*], one should not say that the human body, which is the proper and appropriate subject of the human soul, should impede it in its operation.[144] Speaking in supernatural terms [*loquendo supernaturaliter*], however, we concede that God creates the human intellect not in the way nature acts, but voluntarily and freely. And such an agent does not have to produce an effect as perfect as he can, but as he wants. Indeed, it is incompatible with the infinite divine power to produce an effect so perfect that He could not produce another even more perfect than it, for then it would follow that His power would be finite. It is denied therefore that God would create an intellect replete with knowledge; rather, [He creates] one that

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it might assent to its opposite as well. But then, the intellect would have to be inclined to assent to the opposite of the conclusion just as well as to the conclusion, which is false. The example is supposed to illustrate this reasoning by means of the analogical situation of the master who would be no more inclined to apprehend his own fugitive slave than any other person, even if he happened to run into him, unless he recognized the former as one of his own slaves whom he had met before. Buridan's answer will point out that what makes the difference is not some predisposition but the demonstration itself. See Plato, *Meno* 80D5–81A2; Aristotle, *Posterior Analytics* I.1.71a29–30.

143. See *Sophismata,* chap. 4, Tenth sophism.

144. In accordance with Buridan's Aristotelian psychology, the body by its nature should not be an impediment to the soul, whose operations are perfected precisely in the body as its natural subject. But then, of course, this is one of the principal points, indeed, perhaps, the principal point of disagreement between Plato and Aristotle.

is blank, but with the power to perfect itself as is stated in bk. 3 of *On the Soul*.[145]

To the second argument, it is replied that just as fire by its own nature is disposed to heat and to burn if something combustible is added to it, thus the intellect is disposed by its natural inclination to the truth to assent to the first, namely, indemonstrable, principles, or it is disposed to do so by virtue of some preceding declaration, as will be explained later. But it is not thus disposed to assent to the conclusions; rather, the [intellect] needs for this the premises leading to them, to which it previously assents because of its nature. Why, then, does it not happen that it equally assents to the opposites of that conclusion, should they be presented to it? I assert that this is so because such opposites do not follow from the premises to which the intellect had assented in the first place in accordance with its nature. Therefore, it is not disposed either by its nature or by anything else to assent to those opposites.

To the third argument we should reply that the being of sufficient causes, in the way that they are sufficient for the being of the effect, entails the being of the effect; and likewise, the being of sufficient causes, in the way that they are sufficient for producing the effect, entails that the effect comes to be, but it need not follow that it is. Let us, however, except free agents, who do not have to produce the effects to which they are freely disposed, even if nothing requisite for producing those effects is lacking. But when it is claimed that the sufficient causes of the knowledge of the conclusion are the [acts of] knowing the premises, together with the intellect, etc., I say that this is not so, as will be explained later. But even if they were conceded to be sufficient taken together and arranged into an evident consequence, I say that perhaps they would be sufficient for producing the knowledge of the conclusion, but not for its being. And even if they were sufficient for its being, they would still be prior to it by nature, as is stated in the *Categories*,[146] for they would be its causes. Again, the major is not sufficient [to justify the conclusion] without the minor, whence knowledge of the major may precede knowledge of the conclusion by a long interval.

A Doubt

But at this point some people raise the following reasonable doubt. If from the sufficient causes there necessarily follows the effect, then it seems that someone who knows the principles to be presupposed at the beginning of

145. Aristotle, *On the Soul* III.4.430a1–2.

146. Aristotle, *Categories* 12.14a36–b9.

geometry should straight away or pretty soon know all the conclusions of geometry, and indeed, do so without the help of a teacher; but this is false. The consequence is clear from the fact that the knowledge of those principles along with the intellect, etc. are sufficient for the knowledge of the first conclusion; therefore, the knowledge of the first conclusion immediately follows. And if you say that these premises are not sufficient causes, but the appropriate arrangement of those principles into an evident consequence is also required, then I say that at least the [acts of] knowing those principles along with the intellect, etc. are sufficient causes for producing this arrangement. And then this arrangement should immediately follow, and consequently also the knowledge of the first conclusion. But these factors already suffice for the knowledge of the second conclusion, or for the arrangement yielding this conclusion. Therefore, the arrangement yielding the second conclusion and knowledge of the second conclusion should immediately follow. And so forth.

And I respond that the intellect, along with the knowledge of the premises—not merely habitually, but as actually considered—and the conclusion formed in the mind, and their arrangement into a necessary consequence and the actual knowledge of the fact that it is a necessary consequence, are all [taken together] indeed sufficient for the knowledge of the conclusion. Therefore, when these are all given, then it is necessary for the knowledge of the conclusion to exist or to follow immediately, but, if one of these is missing, then the rest are not yet sufficient causes. For this arrangement into a consequence is often lacking, as well as the evidentness of the consequence.

Indeed, sometimes it is not a simple matter to arrange those premises in a consequence so as to yield the conclusion. And the reason for this is that although the intellect can know a very large number of propositions habitually, it cannot know as many by actually considering them. Let it know, then, by means of such actual consideration, the first principles A, B, C, D, E, F, although only two of these are needed to demonstrate the conclusion G, which we intend to demonstrate; and let these be C and D, but we do not know that they are the ones needed.[147] The intellect therefore cannot produce all combinations of these principles at once. And perhaps I believe that A is needed for this conclusion. And I go on to combine A with B, and then with C, etc.; but I would not find a valid consequence. Next, free will [*voluntas libera*] will decide to consider the principle E, and the intellect will believe that it is needed and will produce many combinations, and that will be of no use either. But then, occupied with these considerations, the intellect will fail to consider the principles C and D, so it will only have habitual knowledge of them. And

147. Such sudden changes of the grammatical subject, even if they may be somewhat confusing, seem to be characteristic of Buridan's way of providing his examples.

for this reason the intellect will not be able to find the true demonstration. And so, because of tiredness, or for some other reason, the will is going to drag the intellect to consider other things. Or the imagination, being occupied with other phantasms, will cease to provide the intellect with the phantasms needed to consider geometry. And thus it may happen that it never arrives at the demonstration of that first conclusion.[148]

To the fourth argument Aristotle replies[149] that in one sense the conclusion is known even before it is demonstrated, and in another sense it is not known. For it is known virtually, by virtue of the knowledge of the premises, for they have the power [*virtus*] to produce the formal knowledge of the conclusion, just as we would say that the sun is hot virtually, because it has the power to heat, but we do not know it in its proper form.[150] Or we could say, in response to the form of the argument, that it does make a difference whether we say 'I know that every pair is an even number' or 'Of every pair I know that it is an even number', for the first is called 'composite' and the latter 'divided'.[151] Now the following is a valid syllogism: 'Of every pair I know that it is an even number; the coins in your purse are a pair; therefore, of the coins in your purse I know that they are an even number'. But the following syllogism is not valid: 'I know that every pair is an even number; and the coins in your purse are a pair; therefore, I know that the coins in your purse are an even number'. For the sense of the major is that I know the proposition 'Every pair is an even number', from which it does not follow that I know the proposition 'The coins in your purse are an even number'; rather, I learn it by means of the following demonstration: 'Every pair is an even number; the coins in your purse are a pair; therefore, the coins in your purse are an even number'. I say, therefore, that in this case the coins in your purse I know to be

148. Here ends the discussion of the interjected doubt.

149. Aristotle, *Posterior Analytics* I.1.71a16–28.

150. The analogy is based on the consideration of Aristotelian physics that since heat is one of the proper active qualities of the elements in the sublunary world (in particular, of fire), and heavenly bodies are composed not of such elements but of the incorruptible "fifth element" (*quinta essentia,* "quintessence," ether), their proper active quality is light, which has the power to produce heat but is not itself heat, and so the heavenly bodies themselves are properly speaking not hot but only virtually hot on account of this power to heat.

151. The logical difference (in what we would call the scope of 'know') is indicated in Buridan's regimented Latin by the difference in word order between *scio omnem binarium esse numerum parem* and *omnem binarium scio esse numerum parem.* (Accordingly, another, structurally matching translation would be 'I know every pair to be an even number' and 'Every pair I know to be an even number', respectively.) For detailed discussion see *Sophismata,* chap. 4, Tenth sophism.

an even number. But I do not know that they are an even number until you demonstrate it. So much for this opinion and the arguments for it.

(2) The second section sufficiently shows, after the rejection of the aforementioned opinion, that the premises should be known earlier—at least by nature—than the conclusion.

(3) The third section states that we know the major earlier than the conclusion in time, but we know the minor at the same time as the conclusion. But this needs some explanation and qualification. For I say first that either of the premises can be known earlier than the conclusion in time and without the knowledge of the conclusion, for it can be known without the other premise, without which the conclusion is not known. Indeed, it is possible to know the minor premise before the major and without knowledge of the major, for the knowledge of neither of the premises depends on the knowledge of the other premise.

Second, I say that it is impossible to know initially a demonstrable conclusion without knowing both premises together by actually considering them, for the knowledge of one of the premises is not sufficient for the initial production of the knowledge of the conclusion, nor are they sufficient when known habitually, but rather it is requisite that they be known actually. But the agent causes that are in action [*actuales*] must be simultaneous with their effect, as is stated in bk. 2 of the *Physics*.[152] Furthermore, [acts of] knowledge of the premises do not have the power to produce knowledge of the conclusion, unless we also know, by means of actual consideration, that the conclusion follows from those premises, and this we do not know without actually considering them.

In the third place I say that it is possible that I should know both premises at the same time as they are arranged in a syllogism, and yet that I should not know the conclusion, for it is still possible that I should doubt whether it is a valid syllogism.

But in the fourth place, I say that the intended point of this section, and of Aristotle's speaking in this way, is that when proceeding with a demonstration in the most appropriate order I first need to know the major before the minor in time—and, consequently, before the conclusion—and this in terms of their actual consideration, for I do not form both premises at the same time, but one after the other, even if they remain formed together afterwards. In the most appropriate order, therefore, I first form the major, I consider its truth, and I assent to it; and I form the minor afterwards, although in a less fitting sequence I can do so in the reverse order. But when the major has been formed

152. Aristotle, *Physics* II.3.195b17–20.

and is known, and likewise the minor subsequently, and if they remain known together, and if, together with these it is known and [is actually] considered that the conclusion follows from these premises, then it is necessary for the [act of] knowing the conclusion to be or to come to be at the same time, i.e., without any intermediate interval, on account of the [acts of] knowing these premises. And I say 'to be' if the knowledge of the conclusion is generated in an instant, i.e., the whole [is generated] at the same time; and I say 'to come to be' if it is generated successively, in the manner of a form that has [several] grades [of intensity].[153] And we should take it that together with the knowledge of the conclusion, the [acts of] knowing the premises remain [in existence] for some time.

8.4 The comparison of demonstration and dialectical argument, and of knowledge and opinion

(1) Now it is useful to consider the agreements and differences between demonstrations and dialectical arguments. For dialectical arguments and demonstrations are alike in that (2) first, both have to be arguments proceeding from a premise or premises that necessarily or probably entail the conclusion; (3) second, it is necessary for the premises of both to be better known in their truth or rather more readily believed to be true than the conclusion, to avoid begging the question [*petitio principii*]; (4) third, it is possible for both to be a necessarily and formally conclusive syllogism; (5) fourth, they agree analogically [*in proportione*], for just as a dialectical argument generates opinion so does a demonstration generate knowledge; (6) fifth, as it has seemed to some people, they also agree in another analogy, for just as it is not necessary for everyone who has and considers a dialectical argument as carefully as he can to have an opinion based on it, but he may rather have a contrary opinion, so too, it is not necessary for everyone who has a demonstration to have knowledge based on it, but he may take the opposite of the conclusion to be true.

153. An example of such a form is warmth, which comes to be successively, degree by degree, in a body that is getting warm.

This is the fourth chapter of this treatise. It has four parts. The first presents some agreements between demonstrations and dialectical arguments; the second presents their differences; the third points out the agreements between knowledge and opinion; and the fourth shows their differences.

8.4.1 The agreements between demonstration and dialectical argument

The first part contains six sections. (1) The first plainly states the aim of this chapter, and the remaining five present five agreements between demonstrations and dialectical arguments.

(2) The second section, therefore, presents their agreement insofar as both are arguments proceeding from a premise or from premises; from a premise, as with an enthymeme or an example, and from premises, as in a syllogism or induction, entailing their conclusion by a necessary or probable implication. For a demonstration requires a necessary implication, as will be explained later, but a dialectical argument does not require a necessary implication. Rather a probable one is sufficient, for an argument from authority does not conclude of necessity, nor does an example, indeed, neither does an induction or an enthymeme in its own right; and in general, the dialectical loci are not formally valid.

(3) The third section states that the premises should be better known. And this is clear, for it is by means of their cognition that they ought to make the conclusion known. But I say 'better known in their truth', because they need not be better known with respect to the formation of the premises and the conclusion.[154] But I also add 'or rather believed to be true', for it is possible for the premises of dialectical syllogisms not to be true, since Aristotle says that nothing prevents some false propositions from appearing more likely to some people than true ones;[155] but a false proposition cannot be better known in its truth; therefore, it is necessary, disjunctively, for premises to be better known in their truth, if they are true, or at least to be more believable on account of their probability, than is the conclusion.

154. That is, both the premises and the conclusion may be equally well apprehended, yet, before the actual demonstration is carried out, the premises are known to be true, but the conclusion is not.

155. Aristotle, *Topics* VIII.11.161a30–31.

(4) The [claim of the] fourth section is not about actuality [*de inesse*] but about possibility [*de possibili*], for some dialectical arguments are syllogisms of this kind [i.e., necessarily and formally conclusive], but not all of them; however, all demonstrations are syllogisms of this kind.

(5) The fifth section presents the proportionality holding between the relation of dialectical argumentation to opinion and the relation of demonstration to knowledge. And we should assume from what was said earlier that according to its definition, argumentation is the reason producing belief concerning some doubtful matter,[156] i.e., one that is apt to do so. And this belief is taken to be opinion, if the argumentation is merely dialectical, and knowledge, if it is demonstrative.

(6) The sixth section presents another proportionality holding between the relation of dialectical argumentation to opinion and the relation of demonstration to knowledge. But this is rather obscure. Yet what it states concerning dialectical argumentation is quite clear. For we often have probable arguments in favor of either side concerning the same conclusion, so much so that while some great philosopher who carefully considers the arguments for both sides, because of the probability of the arguments for one side, believes this side; yet another, on account of the probability of the arguments for the other side, believes the other. Both arguments, therefore, are dialectical, and probable, if they are able to influence great philosophers in this way. Nevertheless, in the one in whom the affirmative arguments generate an opinion the negative ones do not generate an opinion, and conversely, for otherwise there would exist two contrary opinions, which cannot exist together in the same subject, as is stated in bk. 4 of the *Metaphysics.*[157] It is true, however, that the opinion of the one side can be weakened and lessened by the arguments for the other side.

But what is said here about demonstration and knowledge is less acceptable, hence it is against this point that Aristotle seems to posit a property or description of knowing, or of demonstration, in bk. 1 of the *Posterior Analytics,* when he says: "We call knowing understanding by demonstration";[158] again: "And I call a demonstration a syllogism producing knowledge, or even a syllogism on account of which, when we have it, we know"; and again, later: "For it is necessary to believe and to know the thing when we have a syllogism of the kind we call a demonstration."[159] Therefore, it seems that Aristotle wants these two to be equivalent, namely, knowing the conclusion and being in possession of its demonstration.

156. See 6.2.2.

157. See Aristotle, *Metaphysics* IV.6.1011a15-b22.

158. Aristotle, *Posterior Analytics* I.2.71b18–20.

159. Ibid., I.2.72a25–26.

8.4.2 Their differences

(1) And they differ first because everybody who has the demonstration has to know the conclusion but not everyone who has a dialectical argument has to know the conclusion, indeed, he does not even have to believe it. (2) Hence follows the other difference, namely, that it is necessary for the conclusion in every demonstration to follow from the premises of necessity and on account of its form, but this is not required in a dialectical argument. (3) And from this it further follows that it is necessary for every demonstration to be a syllogism, but any other sort of argumentation can be dialectical. (4) Fourth, they differ because the premises of the demonstration have to be known, but this is not required of dialectical argument. (5) Fifth, it follows that every demonstration has to have a true conclusion from true premises, but a dialectical argument does not require this. (6) Sixth, every demonstration has to proceed from first, true, and immediate [propositions], or from ones whose cognition arose by means of first and immediate [propositions]; but again, this is not required for a dialectical argument. (7) And from these differences there still follow many more.

The second part lists the differences between demonstration and dialectical argument, and it has seven sections. The first presents the difference that everyone who has a demonstration has to know the conclusion, but this is not necessary [for someone who has a dialectical argument].

The first part of this difference is clear, if we are willing to agree with Aristotle, for he says in bk. 1 of the *Posterior Analytics:* "We call knowing understanding by demonstration";[160] and again, "I call a demonstration a syllogism producing knowledge." Therefore, we say that this is a description of demonstration: "a demonstration is a syllogism producing knowledge." And he also says that a demonstration, i.e., a syllogism producing knowledge, is "A syllogism on account of which, when we have it, we know";[161] and again, he says: "For it is necessary to believe and to know the thing when we have a syllogism of the kind we call a demonstration."[162]

And this indeed seems to provide the interpretation of the name [*interpretatio nominis,* i.e., nominal definition] 'demonstration'; for something is called a 'demonstration' as if it were 'the presentation of the conclusion' [*conclusionis monstratio*]; and it is not the presentation of the conclusion as to its formation, for in this respect it had already been recognized before the demonstration,

160. Ibid., I.2.71b18–19.
161. Ibid., I.2.71b19–20.
162. Ibid., I.2.72a25–26.

as was said earlier; therefore, it is the presentation of the conclusion with respect to its knowledge. And the demonstration would not present this knowledge unless it produced the knowledge of the conclusion. Therefore, if someone who had it did not know the conclusion, then it would not present the knowledge of the conclusion; therefore, the name 'demonstration' would not apply to it. But this should be presupposed as the precognition of the nominal definition [of the name 'demonstration']. Thus, Aristotle concludes from this assumption the properties that he later assigns to demonstration.

Nevertheless, despite these points, some people have raised serious doubts concerning this issue, for it is possible that someone has the syllogism available with true and primary premises that necessarily and evidently imply the conclusion and that are such that they [could] produce in him the knowledge of the conclusion, and yet, although he has the syllogism available in this manner, he is impeded from believing the premises, so that he does not believe them, and for this reason he does not believe on their basis the conclusion. Now, that it is possible for someone to be thus impeded from believing the first indemonstrable principles is clear from bk. 6 of the *Ethics,* for there we read: "malice perverts and makes one lie concerning the first principles."[163] Therefore, although a bad person may have available the entire practical demonstration both in utterance and in mind, yet, he may not believe the first principles, nor the conclusion, and so he does not know the principles, nor the conclusion.

Furthermore, there are many first and indemonstrable principles that nevertheless require experience in order to be believed without doubt, as will be explained later. But many people lack experience because they are young or for some other reason. Therefore, these people do not firmly accept and believe such principles, even if they are placed in a perfectly formulated demonstration. Thus these demonstrations do not bring it about that they know.

Furthermore, free will may dispose a man to believe things that are far from evident, as are the articles of faith, and it can, by the same token, determine the intellect not to believe what great philosophers took to be self-evident first principles. For example, Aristotle believed[164] that an expository syllogism in the following form is valid and self-evident: 'This C is A; and the same C is B; therefore, A is B'; and likewise this, in the first mode of the first figure: 'Every B is A; every C is B; therefore, every C is A'. The will, however, because the article of faith concerning the Trinity must be sustained, may in fact not believe these consequences.[165]

163. Aristotle, *Nicomachean Ethics* VI.13.1144a34–36.

164. See Aristotle, *Prior Analytics* II.22.68a16–19.

165. With the terms 'Father', 'Son', 'Holy Spirit', and 'God' these syllogisms are invalid.

And this is what Aristotle and the Commentator [Averroes] say about custom, namely, that customarily hearing falsehoods since childhood is the cause of neglecting and denying many principles of demonstrations.[166] "How much power custom has is shown by the laws, in which many legendary and childish elements prevail over their cognition," namely, [over their] demonstrative [cognition], "on account of custom."[167] So he [Averroes] adds that many people do not accept many demonstrations by assenting to them.[168] "For some people do not listen if the speaker does not speak mathematically, whereas others don't if he does not give examples, and yet others don't if he does not cite the authority of a poet."[169] Thus they question even self-evident principles, whence comes the verse: "Who says this?"[170] Therefore, these and similar things seem to be able to prevent someone who has the demonstration from having knowledge of the conclusion, or even of the premises.

These issues are very difficult. And it seems to me that one should talk about them in one of two ways, either [by saying] that someone who has the whole demonstration, not only in utterance but formed in the mind as well, does not have knowledge of the conclusion, or perhaps neither of the premises, or [by saying] that an entirely similar syllogism within me and within you is a demonstration within me but not within you—and I say "entirely similar" with respect to syllogistic form and with respect to the propositions as to their form and terms—for, besides all these features, the name 'demonstration' connotes that the premises are known, namely, along with certainty and with the evidentness of what is believed, which perhaps is present within me but not within you, as the above-presented arguments show. And I hold this alternative.

But in connection with the second part of this section it is quite well known that we often have several probable arguments for both sides concerning the same conclusion, and these we consider to be weighty and probable to such an extent that the arguments for either side would make us believe, indeed, strongly believe, that side, if we did not have the arguments in favor of the opposite side. But when we have the arguments on both sides, we often do not decide on either side because of the apparent probability of the arguments for the other side. And even if we do decide, nevertheless we have a weak

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For example, the syllogism 'The Father is God, and the same God is the Son; therefore, the Father is the Son' is invalid, because the premises are true and the conclusion is false.

166. Aristotle, *Metaphysics* II.3.995a3–9; Averroes, *In Aristototeles II Metaphysicorum Commentarius,* ed. G. Darms (Fribourg: Paulusverlag, 1966), pp. $74^{14–15}$ et seq.

167. Aristotle, *Metaphysics* II.3.995a3–5.

168. Averroes, *In Aristoteles II Metaphysicorum Commentarius,* pp. $76^{14–15}$.

169. Aristotle, *Metaphysics* II.3.995a6–7.

170. The reference is unclear here.

and vacillating opinion, barely carrying this decision into effect because of the probability of the arguments of the opposite side.

(2) The second section presents the difference [between demonstration and dialectical argument] that in every demonstration the conclusion is inferred from the premises of necessity and on account of the form [of the argument], whereas this is not required for a dialectical argument. For it properly pertains to demonstration to produce the knowledge of the conclusion by means of the knowledge of the premises, and it does this only because the known premises are known to entail the conclusion. Therefore, just as the premises have to be first, or proved from first premises, as has been said, as well as evident and known, and not merely probable, so also the consequence has to be first, or proved from first premises, as well as evident and known, as opposed to a merely probable consequence. Or, although perhaps it is probable, still, it is not evident or known unless it is formally valid or [can be] reduced to a formally valid [consequence], and thus it is not first and indemonstrable or proved by means of a first and indemonstrable premise in the way in which the syllogisms of the second and third figures are proved by means of the first figure. This is why it happens that many people take themselves to know a great deal, but in fact, because of their deficiency in logic, they know little, for although they know the premises, they do not know that the conclusion follows from the premises.

It is true that some people say that knowledge of the consequence is not required for knowing the conclusion, but [only] for knowing oneself to know the conclusion. But it still seems to me that this is required for knowledge of the conclusion. For assuming that Socrates knows some premises that are first, self-evident principles, and that he also has a necessarily concluding syllogism, [it is still possible that] because of his deficiency in logic he doubts whether it is necessary, and thus he will doubt the conclusion. And if he believed it not to be a valid consequence, he will say that the conclusion need not be conceded on the basis of those premises. If, therefore, doubting the consequence implies not knowing the conclusion based on these premises, then it follows that it is necessary to know the consequence in order to know the conclusion on the basis of such premises.

Furthermore, if concerning the aforementioned case someone were to say that Socrates had known the conclusion before he started doubting the consequence, but when on account of a sophistic argument presented to him he started to doubt that consequence, he could also doubt the conclusion and not know it, then it seems to me that we should say that this is an unacceptable characterization of the situation. For then the knowledge acquired by demonstration would be very weak, if, with the whole demonstration remaining in place, it would be lost on account of one piece of sophistic reasoning. But that

dialecticians and orators use several arguments that are neither necessary nor formally valid consequences is quite obvious.

(3) The third section presents the third difference, namely, that every demonstration is a syllogism. And this is so because no other species of argumentation is a necessary and formally valid consequence, as has been stated at the beginning of the treatise on the dialectical loci.[171]

(4) The fourth section presents the fourth difference, that it is necessary that the premises of the demonstration should be known. And it is clear that it is not necessary for the premises of a dialectical argument to be known, for it is possible that they are false, and what is false is not known. But they have to be probable, or at least more probable than the conclusion; and, furthermore, if they are to produce opinion concerning the conclusion, they have to be believed, and believed more than the conclusion. But that the premises of a demonstration have to be known is clear, for otherwise they would not produce the knowledge of the conclusion. For however much they would be recognized with respect of their form and however necessary they would be, if they were also doubtful with respect to their truth, or were they to be believed, but not with certainty and evidentness, then by virtue of them there would never ensue a clear and evident knowledge of the conclusion.

(5) The fifth section presents the fifth difference, namely, that the premises and the conclusion of a demonstration have to be true. And this is so because they have to be known, and what is false is not known; but it is indeed possible for something false to be probable and believed.

(6) The sixth section presents the difference that the premises of a demonstration have to be first and immediate, or known on the basis of first and immediate [premises], or at least one of them has to be first and immediate, and the other known on the basis of first and immediate [premises]; but this is not required with respect to the premises of a dialectical argument. And [what is said in this section] is self-evident as far as dialectical arguments are concerned.

But to clarify what is said concerning demonstrations, we should realize that, as with other superlatives, something is said to be 'first' either because it is prior to everything else or because nothing is prior to it. In this context that proposition is said to be prior on the basis of which another is demonstrable, and that one is called posterior which is demonstrable on the basis of the other. But of those of which neither is demonstrable on the basis of the other, neither is said to be prior or posterior to the other. Therefore, in this context concerning demonstrations, a false proposition, or one that is true by accident and which is contingent, is neither said to be prior nor posterior to

171. See 6.1.1.

another, for it is neither demonstrative nor demonstrable. Thus, a proposition in the present context is not said to be first because it demonstrates all conclusions or some known or knowable propositions, but because it serves to demonstrate such a proposition or propositions, and it is not demonstrable by others.

And assuming this as the nominal definition of 'first proposition' in accordance with the present intention, it is easy to see that all premises of a demonstration have to be either first [propositions] or derived from first ones. For along with what has been said it is necessary to presuppose that a demonstrable proposition is not known unless it is demonstrated. This is clearly stated by Aristotle,[172] and reasonably so, because the intellect is not disposed by its nature to assent with certainty and evidentness to a demonstrable conclusion; for otherwise that would not be a conclusion but a principle. Therefore, the intellect has to be made to assent to it with certainty and evidentness by some other premises, to which it so assents.

Then I argue as follows. A premise of a demonstration, along with the other premise, demonstrates everything that is proved by this demonstration. Then this premise is either indemonstrable or demonstrable. If the former, then it follows that it is first, and we have what we wanted to prove. If, the latter, however, then it is either demonstrable or demonstrated by means of other premises or it is not. If not, then it follows that it is not known; therefore, it demonstrates nothing. But if it is demonstrated, then the question is raised, as before, about the premises by means of which it has been demonstrated, i.e., whether they are demonstrable or indemonstrable. If the latter, then they are first, and we have what we wanted to prove, namely, that the premises of the demonstration given at the beginning were known on the basis of first ones. If, however, it is said that these premises are still demonstrable, then the question is raised about the premises by means of which they were demonstrable or are demonstrable, just as before. And we shall have to arrive at indemonstrable principles, and then we have what we wanted to prove, or we would go to infinity. But to go to infinity, in the sense that every demonstrative proposition is demonstrable, is impossible, for this would happen either in a circle, which will be refuted later, or it would involve a regress, which would be impossible, for it is impossible to go to infinity in the series of subjects and predicates, but there has to be a halt upwards and downwards and in the middle, as is sufficiently proved by Aristotle in bk. 1 of the *Posterior Analytics*.[173]

But, again, it is easy to prove that the premises of a demonstration have

172. Aristotle, *Posterior Analytics* I.4.73a23–24.

173. Ibid., I.20.82a21–35.

to be immediate or known on the basis of premises that are immediate by the fact that in this context, 'first proposition' and 'immediate proposition' are equivalent, although these names are different in their corresponding concepts. For a proposition is said to be 'immediate' because there is no middle term by means of which it could be demonstrated, and one like this is called 'first' because it cannot be demonstrated.

(7) The last section remarks that there are also other differences that will be discussed later, and it is sufficiently clear.

8.4.3 The agreements between knowledge and opinion

(1) Since knowledge is the end and the product of demonstration, whereas opinion is that of dialectical argument, we should consider the agreements and differences of knowledge and opinion, in the same way as this has been observed in connection with dialectical and demonstrative arguments. Knowledge and opinion are alike first because neither is a proposition, but rather an assent given to one, i.e., that by which we assent to one. (2) Second, they agree because both of them are said to be sometimes actual and sometimes only habitual. (3) Third, they agree analogically, because an opinion is of some opinable proposition, whereas knowledge is of some knowable proposition. (4) Fourth, they agree because both of them, strictly speaking, are some intellectual act or habit. (5) Fifth, they agree in the analogy to the effect that just as not every opinion is acquired by means of a dialectical argument, so also not every item of knowledge is acquired by demonstration.

The third part states in five sections five points of agreement between knowledge and opinion. (1) The first is that neither knowledge nor opinion is a proposition but is some superadded assent, by which we agree to a proposition. And it is clear that we assent in this way, for every opinion is some belief or some credulity by which we hold or believe about a proposition that it is true, or that things are as it signifies, in the sense given elsewhere,[174] and it is this belief or credulity (or whatever name you may call it) that we call 'assent'.

Now, that these assents are not those propositions is clear, because contradictory propositions can exist in the same subject at the same time, as for ex-

174. *Sophismata,* chap. 2, Fourteenth conclusion.

ample in your intellect, although they cannot both be true at the same time, given that assents or opinions supporting both such contradictories are by nature incompatible with or contrary to their being in the same [subject] at the same time. Hence it is impossible for the same person to believe two contradictories at the same time, as is stated in bk. 4 of the *Metaphysics*.[175] Also, it is possible for you and me to have in mind propositions that are entirely similar, both in matter and form, and for you to believe that proposition though I do not. So you have something more than I do, namely, a proposition with an opinion, but this is not with respect to the substance of the proposition; therefore, you have more on account of what is added. Or at least you are related to that proposition otherwise than I am, not with respect to the substance of the proposition but with respect to what is added. And this should be considered in more detail in [connection with] bk. 3 of *On the Soul* or the *Metaphysics*.

(2) The second section states that there is knowledge or opinion that is actual, namely, knowledge or opinion that exists with actual consideration and assent, and there is a merely habitual version of these, which remains even after every act of consideration stops. And this is sufficiently explained by Aristotle in several places.

(3) The third section states that every opinion is of an opinable proposition and every item of knowledge is of a knowable proposition. For nobody says that he knows or opines a man or a donkey except because he knows or opines a proposition formed with the terms 'man' or 'donkey', as when we opine a man to be honest or a donkey to be strong, and the like. But we should not say on this basis that we do not have knowledge [*scientias*] or opinions about animals or stones, or celestial bodies, although they are not propositions; or that we do not have knowledge and opinions about the subjects of sciences [*scientiarum*] and their attributes, which again are not propositions, but significative terms. We should say that what we immediately have knowledge or opinion of is the proposition to which we assent with knowledge or opinion. We are said, however, to have knowledge or opinion about the known terms because we know or opine the propositions made up from these terms. Furthermore, we say that other things, such as stones or timbers, are known or opined, or that we have knowledge or opinion about them, because they are signified by terms from which known or opined propositions are put together. It is in this way, and not in the other two ways, that we have knowledge about all things.

(4) The fourth section states that every item of knowledge or opinion has to be an intellectual act or habit. And since names are conventional [*ad placitum*], I do not prove this section except on the basis of the fact that the authors deny that the names 'knowledge' and 'opinion' may be extended to the cognition

175. Aristotle, *Metaphysics* IV.5.1009a10–15.

and judgment of the senses, although in many cases we agree with them and act according to them. So, in bk. 3 of *On the Soul*,[176] Aristotle says in connection with opinion that no beasts have belief, and consequently they have no opinion, because they do not have either intellect or reason. And if we do not concede that beasts have opinion, even less should we concede that they have knowledge, also on the further ground that the senses cognize only singulars, of which, however, Aristotle in bk. 7 of the *Metaphysics* states that one does not have knowledge, nor demonstration, nor definition.[177] Nevertheless, if someone wishes to interpret the names of knowledge and opinion more broadly, so as to cover every [sort of] certain judgment, as far as knowledge is concerned, or to cover a judgment that is steadfast [*adhaesivo*], although not certain, as far as any sort of opinion is concerned, then it would not be unacceptable to concede that brutes have some sort of sensory opinions or knowledge.

(5) The fifth section states that not every item of knowledge is acquired by demonstration and not every opinion by dialectical argument. This is obvious concerning knowledge, since it is necessary to know and believe the first principles of demonstrations more than the conclusions, as is proved in bk.1 of the *Posterior Analytics;*[178] but we do not know those by demonstration. Again, we also have opinions about contingent things. And if this occurs without any previous reasoning, then I have what I wanted to prove. And if by previous reasoning, then this reasoning does not proceed by way of a necessary consequence from a necessary antecedent, for then the conclusion would also have to be necessary, which is against the assumption. But if that reasoning is to produce an opinion in us, then it is necessary for us to opine and to believe the antecedent and the consequence, if we wish to attend to this. If therefore we opine this without some previous reasoning, then I again have what I wanted to prove. But if you say that this comes about yet again by a previous reasoning, then I would proceed to infinity, which is unacceptable. Therefore, [some opinion is not acquired by previous reasoning].

We should note, however, that in order to save the [authoritative] claims [*dicta*] of philosophers we have to distinguish [several senses of] the name 'knowledge' in the way that the commentator does in bk. 1 of the *Posterior Analytics.*[179] For taken in the most general sense knowledge is some steadfast

176. Aristotle, *On the Soul* III.3.428a21–24.

177. Aristotle, *Metaphysics* VII.10.1036a5; 15.1039b27–29.

178. Aristotle, *Posterior Analytics* I.10.76a31–32.

179. Robertus Grosseteste, *Commentarius in Posteriorum Analyticorum Libros,* 1:2, p. 99. Apparently, Buridan here does not use the term 'commentator' as the honorific title of Averroes but as an ordinary reference to the author of what he regards as the most authoritative commentary on Aristotle in the present context.

[*adhaesiva*] cognition of a proposition with certainty and evidentness in us, so that it can be distinguished from opinion (as will be explained later), and this applies whether a necessary or a contingent proposition is in question. And it is certain that not every such [cognition] is acquired by demonstration. But the name 'knowledge' strictly speaking is restricted to the intellectual cognition of a necessary proposition. And this cognition is indeed not only of conclusions, but also of indemonstrable principles, which are not acquired by demonstration. But even more strictly, the name 'knowledge' is restricted to the intellectual cognition of a demonstrable conclusion, excluding the cognition of indemonstrable principles. And in this way, in [connection with] bk. 6 of the *Ethics,* we distinguish the name 'knowledge' [*scientia*] from 'understanding' [*intellectus*], insofar as we call understanding the habit of [first] principles.[180] And thus every item of knowledge is acquired by demonstration.

Furthermore, most strictly, we restrict the name 'knowledge' to a steadfast intellectual cognition with the certainty and evidentness of a necessary and demonstrable speculative conclusion. And in this way we distinguish knowledge from understanding, art, and prudence in bk. 6 of the *Ethics.*[181] So in this sense, every item of knowledge is acquired by demonstration, but not every necessary and evidently demonstrated conclusion is some [item of] knowledge: for there are necessary and evident demonstrations in art and in prudence, as well as in moral philosophy and medicine, and the conclusions thus demonstrated do not belong to knowledge in the above-described manner, but rather to art or prudence. And Aristotle in the *Posterior Analytics* sometimes takes 'knowledge' [or 'science', *scientia*] in the second of the above-described ways, and sometimes in the third, and not most generally, as in the first way, nor most strictly, as in the fourth.

8.4.4 Their differences

(1) Now, then, in order to bring out the differences between knowledge and opinion, we say that knowledge differs from opinion first because every [act of] knowledge has to occur with certainty and evidentness, as is clear by its nominal definition, but it is not possible for opinion to be like this. (2) The second difference is that every [act of] knowledge has to be of a true proposition, but not every opinion is such. (3) The third

180. See Aristotle, *Nicomachean Ethics* VI.9.1142a25–26.

181. See ibid., VI.9.1142a23–30.

difference is that we cannot have knowledge of first principles by demonstration, but we can have opinion concerning them based on dialectical argument.

The fourth part is about the differences between knowledge and opinion. It contains three sections. (1) The first states the difference that knowledge [but not opinion] has to occur with certainty and evidentness. I say, therefore, first, 'with certainty'. For certainty requires two things, one on the part of the proposition that is assented to, namely, that it be true; for it is not certain belief on the basis of which we assent to something false, but rather it is uncertain and deceptive; and it is clear that, taken in this way, certainty is required for knowledge, for that which is false we do not know. Another thing is required on our part, namely, that our assent be firm, i.e., without doubt or fear of the opposite side; and this is also required for knowledge, since a doubtful and fearful assent does not transcend the limits of opinion. For if someone assents to a proposition fearing [that] the opposite [may be true], he would never say that he knows that it is true, but rather that he takes it or believes that it is.

And I also say 'with evidentness' so as to indicate the difference [between knowledge and] that credulity that we believers ought to have concerning the articles of Catholic faith, e.g., that God is triune. That credulity has the greatest degree of certainty on the part of the proposition, for it is a maximally true proposition that God is triune. And it should also be the firmest, without any fear on our part, in accordance with the Athanasian Creed [*Symbolum*], at the end: "This is the Catholic faith. Everyone must believe it, faithfully and firmly; otherwise he cannot be saved."[182] But it is compatible with this perfect certainty that because of the lack of evidentness we do not properly have knowledge of [the content of] these articles. Improperly speaking, however, there is evidentness, because the cognitive power by its nature, along with its concurrent circumstances, is disposed to assent to the truth.

That a man can have firm credulity even concerning nonevident, unknown things, without any fear [of the opposite alternative], is clear from Aristotle, who in bk. 7 of the *Ethics* says: "Some people are no less convinced of what they opine than others of what they know."[183] And this firmness of assent without any fear of the opposite arises in us in three ways: first, by evident-

182. *Symbolum "Quicunque"* ("Athanasianum"), in *Enchiridion symbolorum,* ed. H. Denzinger and K. Rahner (Barcelona: Herder, 1957), chaps. 39–40, pp. 17–18. Inc.: "Quicunque vult salvus esse, ante omnia opus est, ut teneat catholicam fidem, quam nisi quisque integram inviolatamque servaverit, absque dubio in aeternum peribit. Fides autem catholica haec est, ut unum Deum in Trinitate, et Trinitatem in unitate veneremur. . . . Expl.: Haec est fides catholica, quam nisi quisque fideliter firmiterque crediderit, salvus esse non potest."

183. Aristotle, *Nicomachean Ethics* VII.3.1146b29–30.

ness, and this is scientific assent; in another way on the basis of will, backed by the authority of the Sacred Scripture, and this is the Catholic faith of the saints who choose to die to sustain it; and in the third way, [the firmness of assent arises] from some false appearance, along with the will's being confined by it, as is the case with stubborn heretics, who also choose to die to sustain their false opinion.

It is true that, because of the aforementioned requirements demanded by the concept [*ratio*] of knowledge, some people, wanting to do theology, denied that we could have knowledge about natural and moral [phenomena].[184] For example, we could not know that the sky is moving, that the sun is bright and that fire is hot, because these are not evident. God could annihilate all these, and it is not evident to you whether He wills to annihilate them or not; and thus it is not evident to you whether they exist. Or God could put the sky to rest or remove light from the sun or heat from fire. And finally, they say that it is not evident to you concerning the stone you see as white that it is such that it is white, for even without the whiteness and the stone God can create in your eye an image [*species*] entirely similar to the one you have now from the object; and thus you would make the same judgment as you do now, namely, that there is a white stone here. And the judgment would be false, whence it would not be certain and evident; and, consequently, it would not be evident even now, for it is not evident to you whether God wills it so or not.[185]

But these objections are solved on the basis of bk. 2 of the *Metaphysics.* For there Aristotle says: "Mathematical exactitude is not to be demanded in all cases, but only in the case of those things that do not have matter; for this reason this is not the method of natural science."[186] And consequently the Commentator remarks on this passage[187] that one need not demand the kind of

184. The allusion is clearly to Nicholas of Autrecourt. See references in n. 3 of the introduction.

185. Nobody could demand a clearer statement of the demon argument made famous in modern philosophy by Descartes. For the conceptual relationships between the demon argument and fourteenth-century nominalism see G. Klima, "Ontological Alternatives vs. Alternative Semantics in Medieval Philosophy," *S. European Journal for Semiotic Studies* 3–4 (1991): 587–618.

186. Aristotle, *Metaphysics* IV.3.1005b19–22.

187. *Aristotelis Metaphysicorum libri XIIII cum Averrois Cordubensis variis in eosdem commentariis,* in Averroes, *Aristotelis Opera cum Averrois Commentariis* (Venice, 1562–74; reprint, Frankfurt am Main: Minerva, 1962), f. 35vb K: "Et non oportet hominem quaerere ut modus fidei demonstrationibus naturalibus sit sicut modus fidei in mathematicis." The critical text's *sit nec* here obviously has to be emended to this edition's *sicut.* Indeed, this reading also appears in several codices according to the critical apparatus.

belief in natural demonstrations [found] in mathematics. We shall therefore declare that there are many diverse kinds of certainty and evidentness.

For there is the certainty and evidentness of divine wisdom, to which no created cognition can attain.

And in the genus of human cognition there are several kinds of certainty as well as of evidentness. For as far as we are concerned, certainty or assent should not be called that of knowledge, unless it is firm, without any fear [of falsity]. But as far as the proposition is concerned one sort of certainty is that which pertains to a proposition so firmly true that it, or one similar it, can by no power be falsified. And in this way we should certainly concede, as they have argued, that it is impossible for us to have such certainty about an assertoric categorical affirmative proposition, unless it consists of terms supposing for God, or, perhaps if we admit natural supposition, of which we spoke elsewhere.[188] But this sort of certainty is not required for natural sciences or metaphysics, nor even in the arts or morality [*prudentia*]. Another sort of human certainty on the part of the proposition, however, is that of a true proposition that cannot be falsified by any natural power and by any manner of natural operation, although it can be falsified by a supernatural power and in a miraculous way. And such certainty suffices for natural sciences. And thus I truly know, by natural science [or knowledge, *scientia*] that the heavens are moved and that the sun is bright.

Accordingly, it seems to me to be possible to conclude as a corollary that supernaturally it is possible for my [act of] knowledge, while it remains the same, to be converted into non-knowledge. For as long as the sun and the sky are moving in accordance with all their natural ways, the assent by which I firmly and with certainty assent to the proposition 'The sun is bright' is true, evident, and certain natural knowledge [*scientia*], endowed with the evidentness and certainty appropriate to natural science [*scientia*]. I posit, then, that if this [act of] assent, which is knowledge at the present time, remains in me for the whole day, and at nine o'clock God removes light from the sun without my knowing this, then that [act of] assent of mine will no longer be knowledge after nine o'clock, for it will no longer be true, nor will it have a true proposition as its object.

An analogous distinction can be made concerning evidentness as well as concerning certainty. For some human evidentness is such that in accordance with it the cognitive power is compelled either by its own nature or by some evident argument to assent to a truth or a true proposition that cannot be falsified by any power; but this is not required for natural science. Another [type

188. See 4.3.4.

of evidentness] is such that in accordance with it the cognitive power is compelled either by its own nature [or by some evident argument][189] to assent to a truth or a true proposition that cannot be falsified naturally, although it could be falsified supernaturally. And this is what is required for natural science.

But that no opinion is of this kind is clear, because this much is signified or connoted by [the term] 'opinion', namely, being short of knowledge in not meeting some of these requirements. But then you would ask whether, when I clearly see Socrates running, I know that Socrates is running or whether I merely opine this. And I reply that then I do not opine this, but I know. For everybody speaks in this way: "I know that this iron is hot, for I clearly feel that it is hot," and "I certainly know that Socrates was running yesterday, for I saw him running." But this knowledge is not knowledge in the second, the third, or the fourth of the modes distinguished above,[190] but in the first mode. Nevertheless, that mode is correctly distinguished universally from opinion. And if the assent by which I assent [to the claim] that Socrates runs when I see him running will remain even after Socrates gets out of my sight, this will no longer be knowledge, but opinion. Therefore, this mode of knowledge soon and easily can be changed into opinion.

(2) The second section states that every [act or habit of] knowledge is [the knowledge] of a true proposition, but not every opinion [is such], since what is false is not known but may well be opined.

(3) The third and final section states that of the first principles one cannot have knowledge by demonstration, for it was said earlier that by 'first' and 'immediate' we mean 'indemonstrable'. But one can have opinion about them by dialectical argumentation. And this is true of many principles that at first had been doubted, until they were made evident by the senses, memory, and experience. For these can be taken to be false, and later opined, on the basis of insufficient evidence, and finally evidently known, when experience has sufficiently been made complete.

Still, lest on account of certain of Aristotle's remarks someone should have an occasion for error in this chapter, it is asked whether it is possible for the same person to have knowledge and opinion of the same thing at one and the same time. And Aristotle responds that in one way this is possible, and in another it is not.[191] In brief, this should be understood so that with respect to that which is immediately knowable and opinable, which is a proposition, it is impossible for the same person to have knowledge and opinion about

189. This clause does not appear in the text, but both symmetry and Buridan's doctrine clearly require it.

190. See 8.4.3.

191. Aristotle, *Posterior Analytics* I.33.89a39–b9.

the same thing at the same time; for it is not possible that you assent to the same proposition with certainty and evidentness and without certainty and evidentness at the same time, although this may be possible successively. But when talking about the remote object of knowledge and opinion, which is a term of which the proposition is composed, or the thing signified by this term, it is possible for me to have knowledge and opinion at the same time about the same thing, for I can so possess a true and necessary proposition, for example, that every man is an animal, and an impossible or a contingent proposition, for example, that every man is a stone or that every man is awake; one I know, whereas the other perhaps I opine. And this is obvious.

8.5 On the first indemonstrable principles of demonstrations

(1) After these points we should discuss the first and indemonstrable principles of demonstrable [propositions]. (2) For there are some such principles, if one cannot demonstrate in a circle, as we shall explain later, and if there is no infinite regress in [the series of] predicates and subjects, neither upwards, nor downwards, nor in the middle, as I assume to have been sufficiently declared by Aristotle in bk. 1 of the *Posterior Analytics.* For unless we were able to arrive at the indemonstrable [principles], it would not be possible to have knowledge by demonstration, and this art assumes this to be false.

The fifth chapter of this treatise is about the first and indemonstrable principles, and it contains four parts. The first shows that there are some such principles; the second deals with their number, or multitude; the third is about their necessity or contingency and their evidentness or nonevidentness; and the fourth shows how they come to be cognized and evident to us.

8.5.1 That there are such principles

(1) The first part contains the first section, which clearly states the aim of the chapter. (2) And it contains the second section, which shows that there

are some first and indemonstrable principles of demonstrations, or that there is some [such principle], for given a demonstrable conclusion A, it is demonstrable by two premises B and C. I ask, therefore, about one of them, for example, about B, whether it is demonstrable or not. If not, then I have what I wanted to prove, for then it is an indemonstrable principle. But if you say that it is demonstrable, then it is not known unless it is demonstrated, and if it is not known, then it did not demonstrate the conclusion, nor does it make it known. And if it is demonstrated, then this will again be by some other premises. About these we ask the same as before. And so we should either go on to infinity, which is impossible according to reason, and consequently nothing would be known demonstratively, or we should make a stand at something not further demonstrable, and we shall then have what we intended; alternatively, there may be a reversion or circularity in the demonstrations, for example, A will be demonstrated by B, and B by C, and again C by A; but for now we assume this to be entirely impossible.

8.5.2 Their number or multitude

(1) There is, however, no one single first and indemonstrable principle, but several. (2) Indeed, there are not many more demonstrable conclusions than there are indemonstrable principles. (3) Therefore, there are infinitely many such principles, for there are infinitely many demonstrable conclusions.

The second part is about the multitude of indemonstrable principles. It propounds three propositions to be proved in three sections. The first is that there is no single first and indemonstrable principle, calling that one 'first', as was said above, which does not have prior and better known premises by which it could be demonstrated. This, then, is easily proved. Let us take some demonstrated conclusion: this is proved by two premises, for every demonstration is a syllogism. And if both premises are indemonstrable, then I have what I wanted to prove. But if one of them is demonstrable, then this again will be by two other premises. And one cannot go to infinity here, as has been said. Therefore, I arrive at a proposition demonstrable by two indemonstrable premises, and we have what we intended to prove.

And it does not count against this point that Aristotle seems to assign, in bk. 4 of the *Metaphysics*,[192] one best-known principle to the status of the first

192. Aristotle, *Metaphysics* IV.3.1005b19–22.

among all the others, namely, that it is impossible for the same [item] to be and not to be in the same [thing], etc.; and if this is the first and most evident and firmest among all, then it follows that there are no other first principles. The solution of this [objection] is that not all indemonstrable principles of demonstration are first in their generality, so that they would be most general, nor are they first in evidentness and firmness, so that they would be the most evident and the firmest. It is according to these criteria, however, that Aristotle posited that principle to be the first. But here we speak about [a principle as] 'first' only by denying [the existence of] something prior by which it could be demonstrated, not because of the lack of more general and more evident ones.

(2) The second section states that there are not many more demonstrable conclusions than indemonstrable principles. And not only this conclusion but also the one that there are no more demonstrable conclusions than indemonstrable principles would be inferred of necessity from the subsequent one, if that were proved; for if there were infinitely many principles, then there would not be so many conclusions without there being as many principles, indeed, [there would be] even more. For the name 'infinite' is expounded as 'some, and there are not so many that there would not be more'.[193] But even the present conclusion is proved as follows. However many middle terms of demonstrations there are, there are as many indemonstrable principles, and more. But there are not many more demonstrable conclusions than middle terms. Therefore, [there are not usually more conclusions than indemonstrable principles].

The major is justified as follows. If a demonstration is carried out on the basis of first and indemonstrable principles, then there will be a single middle term and two indemonstrable principles. If, however, both premises are demonstrable, then let us take the syllogism 'Every B is A; every C is B; therefore, every C is A'; here, then, there is one middle term and no principle,[194] but one has to prove the major and the minor beforehand. Let therefore the major be demonstrated thus: 'Every D is A; every B is D; therefore, every B is A'; and the minor thus: 'Every E is B; every C is E; therefore, every C is B'. And let us assume that we can stop here, so that this major and this minor have already been proved by means of first premises. It is clear, therefore, that

193. *Aliquot et non tot quin plura.* That is to say, however many things you may take, an infinity of things will always be more.

194. Here I amended the critical text on the basis of the critical apparatus. The critical text has *unum principium* (one principle), which, given the assumption that both premises are demonstrable, does not make sense. Two codices, however, provide the correct reading of *nullum principium,* which is what I have adopted in the translation.

there will be three middle terms here, namely, 'B', 'D' and 'E'; but there will be four first premises, namely, two for proving the major and two for proving the minor. So it is universally true that if a demonstration is carried out by means of first premises, then there will be two principles and a single middle term, and if the premises of the demonstration require prior proofs, then it will be necessary, once those prior proofs have been completed, for there to be one more principle than there are middle terms.

But then the minor of the principal argument, namely, that there are not many more conclusions than middle terms, is justified, because we can see that several diverse conclusions are demonstrated by diverse middle terms. And thus, also, just as it is possible to demonstrate several conclusions by the same middle term, so, conversely, it is often possible to demonstrate the same conclusion by several middle terms. But to clarify even better the issue at hand, we should see in how many ways the conclusions can be multiplied beyond the number of principles or the principles beyond the number of conclusions. At first sight it appears that conclusions are multiplied beyond the number of principles, on account of the fact that the same syllogism can conclude to many [conclusions]; i.e., the same premises, arranged in the same way, can entail several conclusions, as for example the following two: 'Every B is A' and 'Every C is B' entail that every C is A, that some C is A, that some A is C, that no C is not A, and that not every C is not A. And thus on the basis of two premises one knows all these conclusions, and thus they are demonstrated, for I am assuming that they were doubtful before.

But I say that in the demonstrations of these conclusions, not only are two first principles required, namely, the two premises, but also several others, for a demonstration requires not only the evidentness of the premises but also the evidentness of the consequence. But that consequence is a proposition, albeit a hypothetical one. And so, if the consequence is evident in itself, then it is an indemonstrable principle; and if it is not evident in itself, then it needs to be demonstrated by evident principles. Therefore, in the demonstration from first premises 'Every B is A; every C is B; therefore, every C is A' there are three indemonstrable principles, namely, the two premises, and, on the part of the consequence, the following hypothetical proposition, or one equivalent to it: 'If every B is A and every C is B, then every C is A'. But if from the above-stated premises you infer another conclusion, namely, 'Some A is C', then, if the corresponding consequence is evident, then it is a first indemonstrable principle that is expressed by the word 'therefore' or by the proposition 'If every B is A and every C is B, then some A is C'. And if that consequence is not evident, then it needs to be proved, and it is proved by the conversion of the conclusion, which again either involves a consequence evident in itself, and thus it is an indemonstrable principle, or it is to be proved by evident [prin-

ciples]. And thus it is clear that because of the multiplication of conclusions from the same premises the indemonstrable principles have to be multiplied on the part of the consequences.

But then, further, if we confine our consideration to the first premises only, leaving aside the indemonstrable principles arising from the evidentness of consequences, then there are some simple demonstrations that Aristotle in bk. 5 of the *Metaphysics* calls the elements of other demonstrations, and others that are composed of these simple ones.[195] The latter are called 'simple' because they are not analyzable into prior demonstrations by prior proof [*per prosyllogizationem*] of their premises or one of their premises. And it is clear that these proceed from first premises. Therefore, in all of these there are two indemonstrable principles for one conclusion, and so more principles than conclusions.

But demonstrations that are analyzable into prior ones by prior proofs of the premises are called composite. And then it is possible in some cases for the conclusions to multiply beyond the multiplication of the indemonstrable principles if they are augmented by continuously assuming more than four terms. For in the simple demonstration based on the three terms A, B, and C, we get two propositions, namely, AB and BC, and one conclusion, namely, AC. But then assume a fourth term, D, subsumed under the minor extremity C, and we shall have three first propositions and three conclusions. And I say "first propositions," namely AB, BC, and CD, and I say "three conclusions," namely, AC, by the middle term B, and BD, by the middle term C, and AD, by the middle terms B and C. But, furthermore, if we add a fifth term under D (and let it be E), then in this way there will now be four first propositions, namely, AB, BC, CD, and DE, but we can point to six conclusions, namely, AC, AD, AE, and, further, BD and BE, and, furthermore, CE.

But in the augmentation of demonstrations that proceed by subsuming terms [not][196] "on the side" [*ad latus*], namely, not under the minor extremity, but under the middle term, this would not happen. For example, let the major extremity be A, and let the middle term be B; and subsume under it several of its species, namely, C, D, and E. In that case, then, by the middle B we shall have three conclusions, namely, 'Every C is A', 'Every D is A', Every E is A'. But also along with the first, while keeping the same major, there will be three first minor [premises], namely, 'Every C is B', 'Every D is B', and 'Every E is B'.[197]

195. Aristotle, *Metaphysics* V.3.1014a35–b2.

196. See text at 8.3.6 n.138.

197. *Sed etiam cum prima, eadem maiore manente, erunt tres primae minores, scilicet 'omne C est B', 'omne D est B' et 'omne E est B'.* The reference in the first clause of this sentence is somewhat unclear (it probably refers to the original minor premise, say, 'Every X is B'); nevertheless,

(3) The third section states that there is an infinity of first principles. There are infinitely many demonstrable conclusions; therefore, there are infinitely many principles. That the demonstrable conclusions are infinite is clear in geometry because of the infinity of figures. For just as a triangle has a proper attribute that can be demonstrated of it, namely 'having three angles equal to two right angles', so also does a quadrangle, namely 'having four angles equal to four right ones', and so does a pentagon, namely 'having five angles equal to five right ones'; and so on to infinity. Therefore, there is an infinity of demonstrable conclusions in geometry. And I say "there is an infinity," i.e., there can be an infinity, so we need not be concerned about this in this context.[198] And the same goes for the principles. And so it is as well in arithmetic, because of the infinity of the species of numbers.[199]

But that this infinity of demonstrable conclusions entails the infinity of indemonstrable principles is proved as follows. All these propositions have diverse subjects that are not subordinated to one another with respect to predication, as is the case with the terms 'triangle', quadrangle', 'pentagon', etc., and they also have diverse predicates. Therefore, there are infinitely many subjects of demonstrable conclusions. But it is necessary, if A has to be demonstrated of B, since this needs to be resolved into immediate [propositions], that one immediate premise consist of A and some middle term, and another of B and some other middle term. Therefore, it is necessary that if there are infinitely many subjects or predicates of a demonstrable conclusion, then there are infinitely many indemonstrable first premises.

And this infinity is not incompatible with that finitude of the series of predicates and subjects that Aristotle was talking about in bk. 1 of the *Posterior Analytics*.[200] For the finitude he is talking about and that his arguments prove is that, for any given predicate or subject, it is not possible that there should be infinitely many predicates of this subject, or infinitely many subjects of which these would be predicated. But there may well be an infinity of subjects none of which is predicated of another of them; and the same goes for predicates.

And these points clearly reveal the error of some people lecturing nowa-

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the point of the whole passage is clear enough, namely, that when we multiply the conclusions by subsuming subordinate terms under the original middle term (while keeping the same major premise), the required minors are equally multiplied, in contrast to the previous case, where subsuming under the minor term yielded more conclusions than premises.

198. Buridan simply does not want to go into the issue of actual infinity, which is irrelevant here.

199. Buridan talks about species of numbers, since for him numbers are concrete collections of concrete units. So, e.g., any group of three units, such as these three stones and these three people, are individuals of the species 'number three' *(numerus ternarius).*

200. Aristotle, *Posterior Analytics* I.19.82a15–22.83a2.

days who say that no evident proof is possible in terms of which we conclude from the existence of one thing to the existence of another, as for example when from the existence of motion we want to prove the existence of a mover or from the existence of the house the existence of the walls.[201] For they say that there cannot be an evident proof unless it can be reduced to the first complex principle posited by Aristotle in bk. 4 of the *Metaphysics;*[202] but this cannot be done in this case, for that principle is founded on contradiction, and there is never a contradiction concerning diverse things [in the claims] that this exists and that does not exist, for example, that motion exists and a mover does not; for a contradiction has to involve the same [predicated] of the same, both in reality and in intention. These people, therefore, assume something false, namely, that only this principle is evident and that every other principle can and has to be proved by it. But these claims are absurd and are made only because of the ignorance of logic. For, as Aristotle says in bk. 4 of the *Metaphysics,* "It is a lack of erudition," i.e., a lack of logic, "not to recognize of what things one should demand a demonstration and of what things one should not."[203]

8.5.3 On the necessity and evidentness of some principles

> (1) And not all principles are necessary, but many are contingent, (2) neither are all of them evident when they first occur or are propounded to someone considering them, but many are doubtful, or opined to be false. (3) But some are evident as soon as they are propounded, if the terms are known with respect to their signification, and the form of proposition is known.

The third part has three sections. The first of these states that not all first principles are necessary. And this immediately seems to contradict Aristotle, in bk. 1 of the *Posterior Analytics,* and in bk. 2, where he calls the habit of first principles 'understanding' [*intellectus*] and the habit of the conclusions 'knowledge' [*scientia*], and says that some habits may involve falsity, as for ex-

201. This is another jab clearly directed at Nicholas of Autrecourt. See references in n. 3 of the introduction.

202. Namely, the principle of noncontradiction. Aristotle, *Metaphysics* IV.3.1005b19–22.

203. Ibid., IV.4.1006a7–8.

ample opinion [*opinio*] and reasoning [*ratio*], but knowledge and understanding are always true.[204] And the same point is clear from bk. 6 of the *Ethics,* where it is said that there are five intellectual virtues by which one can never say something false, and one of these is stated to be understanding.[205] But this is what is necessary, namely, that which is always true and never happens [*contingit*] to be false.

But this is immediately solved by what has been said in the preceding chapter. For if 'knowledge' is taken in the first of the ways distinguished there,[206] then it is indeed contingent, i.e., it is of a contingent conclusion, and the principles demonstrating it, or some of them, are contingent as well; and thus they are not always true, but they can be false. And what is said in connection with this concerning prudence will be discussed later. But concerning knowledge in the second sense, which is meant by Aristotle in bk. 1 of the *Posterior Analytics,* it is true that it is always true and necessary and that it relates to a true and necessary conclusion or proposition. And the understanding that demonstrates such a conclusion is also always true and necessary. But more on this later.

That, therefore, some self-evident and indemonstrable principle is contingent is clear from what is said about prudence in bk. 6 of the *Ethics.*[207] For there are many contingent conclusions of prudence, which nevertheless are made evident and known in the first sense of knowing, although not in the second, third, or fourth sense. And they are evident and known on the basis of arguments that deserve to be called 'demonstrations' generally speaking, corresponding to 'knowledge' taken in the first way, for they make their conclusions known in this way, although they are not demonstrations correlated with knowledge in the other senses, which is what Aristotle is talking about in the *Posterior Analytics.*

The premises of such prudential demonstrations, therefore, are known with certainty and evidentness, since this is how they make their conclusions known, and they do not carry on to infinity in their premises. Therefore, they arrive at self-evident and known and indemonstrable premises. And thus these are to be called first and immediate and indemonstrable principles. Because the conclusion is contingent, however, those premises have to be contingent, or at least one of them, for if they were necessary, the conclusion following from them would also have to be necessary.

(2) The second section states that not every first principle is self-evident

204. Aristotle, *Posterior Analytics* I.33.88b30–89a2, II.19.100b8–16.

205. Aristotle, *Nicomachean Ethics* VI.3.1139b16–17.

206. See 8.4.3.

207. Aristotle, *Nicomachean Ethics* VI.5.1140a25ff.

when it first occurs. And this is obviously true for moral principles, for it is possible to lie about them, namely, by denying them and assenting to their opposites; for malice, as is said in bk. 6 of the *Ethics,* corrupts and makes one lie about practical principles.[208] In fact, even without malice, passionate young persons, because of their passions and lack of experience, do not concede them; indeed, they are not apt students of the moral sciences, as is stated in bk. 1 of the *Ethics.*[209] This is not only true for art and prudence, but even for speculative knowledge in the second, third, or fourth sense. For a great number of first and indemonstrable principles in natural science are doubtful to us until we have had many experiences involving them, over a long period of time, as will be explained later.

(3) The third section states that some such principles are at once evident to us when they are propounded to us. And this is the case with that most general and most evident principle that Aristotle posits in bk. 4 of the *Metaphysics,*[210] and the principles that come under it, e.g., that it is impossible for a man to run and not to run, that it is impossible for the same line to be simultaneously equal to itself and not to be equal to itself, and that it is impossible to dissent from such principles, or to assent to their opposites, because of the evident repugnance involved in contradiction. There are also many others that are based on the evident inclusion of the concepts of the names [involved] [*propter evidentem rationum nominum inclusionem*],[211] as for example that every vacuum is a place, if it exists, and that every pug is a nose, if it exists. For these are necessarily conceded on the basis of the nominal definition, provided the signification of the terms is known. And there are also many others that are based on what is evident to the senses, or their singulars are, as for example that something is immutable or mobile, or that there are many beings, or again, that this donkey is eating (which is immediately evident to me, since I see him eat);[212] and so on for the other cases.

208. Ibid., VI.5.1140b15ff.

209. Ibid., I.2.1095a3.

210. Aristotle, *Metaphysics* IV.3.1005b19–20.

211. I have taken this reading from the critical apparatus. The critical text here has: *propter evidentem rationem nominum inclusorum*—"based on the evident concepts of the names included."

212. Given that 'donkey' *(asinus)* was also the widely used term for dumb or lazy students, this may well have been a jocular remark by Buridan when he noticed a student eating during his lecture. It may also have been a reference to a real donkey eating the hay on which his students were sitting in rue du Fouarre. Or it may have been just an imaginary example, of which no verification is required, as we are often reminded by Buridan.

8.5.4 How they are cognized

(1) Therefore, the evident cognition of principles is neither innate to us (2) nor is it acquired by teaching in the strict sense, (3) but it is acquired by the intellect's natural inclination to assent to them, along with the previous assistance of the senses, memory, or experience. (4) For some principles become evident to our intellect by the nature of the intellect only on the basis of previous sensation, but some on the basis of previous sensation and memory without experience, and some on the basis of memory and experience. (5) And some of these principles are singular propositions, some common; and of the ones that are common, some are particular or indefinite, and some are universal. (6) And the singular ones are manifest from experience by example, the particular or indefinite ones by the abstraction of a common concept from a singular concept, and the universal ones by induction.

The fourth part explains how the first principles are evident to us. And it contains six sections. The first states that the evident cognition of first principles is not innate to us, i.e., [we do not have their cognition] from birth, nor do we have them implicitly ingrained [*nec est habitus eorum*]. And this is declared by Aristotle in bk. 3 of *On the Soul*.[213] For the intellect at the beginning is like a clean slate [*tabula rasa*] on which nothing is written. Therefore, there is no act of understanding in it, and, consequently, no habit [*habitus*] of it either, for habit is generated out of act. But Aristotle also proves the proposition stated here in bk. 2 of the *Posterior Analytics*,[214] on the grounds that such evident cognition could not be hidden from us, given that we experience the fact that other, not-so-evident and certain [acts of] cognition of ours are not hidden from us.

(2) The second section states that these principles are not known and evident to us by teaching [*doctrina*] in the strict sense. And I call 'teaching in the strict sense' when something doubtful becomes known to us by an argument from better-known [premises], necessarily and evidently concluding on account of its form. For if by such an argument provided to us by a teacher we acquire evident knowledge of the conclusion, then that knowledge deserves to be called doctrine [i.e., the result of teaching], for it is by virtue of this doctrinal argument that the intellect is determined to a certain and evident adherence as regards the conclusion. But if there is no such argument, and we acquire the evident knowledge of the conclusion, that does not deserve to be called doctrine, for it is not by virtue of [such an argument] that the intellect

213. Aristotle, *On the Soul* III.4.429b31–430a2.

214. Aristotle, *Posterior Analytics* II.19.99b25–30.

is compelled to admit this evidentness, but by its own nature. The first principles do not become evident to us by means of such arguments, however, for those arguments would constitute demonstrations, and the principles are taken to be indemonstrable.

(3) The third section states that the first principles themselves become evident to us by the intellect's natural disposition [*determinatio*] to assent to them. And this is clear from the preceding two sections. For since this evidentness is not innate to us, nor produced in us by some argument that sufficiently determines the intellect to yield this evident assent, and that it would infer of necessity on account of the form [of the argument], and we know also that there is no such necessary and formally valid consequence, it is hence necessary to concede that this disposition arises from the nature of the principle and from that of the intellect. For we should imagine this [to happen] in the way that fire is disposed and is apt by its nature to burn, if some combustible material is put next to it and nothing blocks it; and wheat is disposed to produce the head, the flower, and the kernel and the husk containing the kernel; and the swallow is disposed to make such and such a nest when it is time to lay eggs, even if without the use of the senses it would not be able to do this.

In this way, therefore, one has to say that the intellect is naturally disposed to assent with certainty and evidentness to the first principles. And this is what the Commentator means when he says in bk. 2 of the *Metaphysics* that we naturally have the cognition of the first principles concerning any genus of beings.[215] Nevertheless, it is true that the intellect needs the assistance of the senses for forming the evident cognition of these principles, for all our intellectual cognition in this life depends on previous sensory cognition. For it is necessary for anyone who understands to consider [*speculari*—lit., to look at] phantasms, as is stated in bk. 3 of *On the Soul.*[216]

(4) The fourth section makes three claims. First, that some principles become evident to the intellect by means of previous sensation only, for in a well-disposed man the intellect is inclined to be moved immediately by the senses, and what is evident to the senses becomes immediately evident to the intellect. For example, it is evident to the doctor by the senses that this patient is in fever, given that his pulse is very fast and his urine is very red; and immediately, from the senses, these are also evident to him in terms of the intellect; and to this intellect these evident and indemonstrable [observations] serve as the principles of a demonstration, on the basis of which by his art he concludes that this patient is feverish and that he must not be given wine.

215. *Aristotelis Metaphysicorum libri XIIII cum Averrois Cordubensis variis in eosdem commentariis,* bk. II, chap. 1, f. 29ra A.

216. Aristotle, *On the Soul* III.7.431a16.

In the second place this section states that some principles become evident to the intellect by the senses and memory, and not only by the senses. For, as Seneca says, "if you are prudent, command the present, foresee the future, and remember the past."[217] So, I posit the case that Socrates sees Plato driving away his ox without permission, and he cannot resist him at that moment; then, the next day, Socrates sees Plato in front of the judge and remembers that the day before Plato robbed him of his ox, and he remembers this with evidentness, on the basis of which he consequently forms in his intellect the proposition that is evident, although indemonstrable to him, namely, 'Yesterday Plato robbed me of my ox'; and this is now a principle of a prudential argument allowing him to infer and prove the conclusion 'I must now explain how Plato robbed me of my ox, and ask the judge to make him return it to me'. And he does so by prudence.

But, again, this fourth section [also] states that some principles become evident to the intellect by previous sensation, memory, and experience. And this is clear on the basis of the following. Suppose a child sees a red, burning piece of coal and he touches it and feels the heat and the pain; and again, suppose he touches another burning piece of coal and feels the heat and the pain; and the next day he sees another piece of burning coal, and then, remembering the others, he immediately judges that it is hot and hurtful, and avoids it. Now this does not come about by means of the intellect, for a young puppy, which does not have intellect, would do the same; but what judges this is the estimative power [*virtus aestimativa*]. But this is not properly called a sensory judgment [*iudicium sensitivum*], for he never touched this [last] piece of coal, nor does he feel that it is hot and hurtful. But neither is this a judgment of memory [*iudicium memorativum*], for it is not about the past, but about the present, namely, that this is [and not that it was] hot and hurtful. But this is called a judgment of experience [*iudicium experimentale*]; and since the estimative power judges this at once, the intellect in a discerning man subsequently judges the same. And a man can sense and remember such things so many times that the intellect by a natural inclination assents with certainty and evidentness to the fact that this piece of coal is hot and hurtful, although he never touched it. And this is an indemonstrable principle of prudence that yields the conclusion that it is not good to touch it.

(5) The fifth section makes two more claims: First, that of the principles cognized by the senses, memory, or experience, some are singular propositions, as are the ones in the previous example, and others are common. For

217. *Si prudens es, ordina praesentia, futura praevide, praeterita recordare.* The reference for this has not been found.

the intellect from a singular proposition known to it is apt to infer a conclusion known to it. For example, since the proposition 'This piece of coal is hot' [*Hic carbo est calidus*] is known to me, it also becomes immediately known to me that a piece of coal is hot [*Carbo est calidus*].

Second, this section also states that of these common principles, thanks to the mediation of the ones known by experience, some are particular or indefinite, as has already been exemplified in terms of the principle that a piece of coal is hot or that some piece of coal is hot, and some are universal, for example, that every piece of red, burning, glowing piece of coal is hot. For the intellect gathers from memory with certainty and evidentness that it knew many such pieces of coal to be hot by sensing them, and in none of these sensations did it perceive one not to be hot, and with careful consideration it perceives no contrary circumstance or reason why the case should not be the same with others.

Therefore, although these [factors] do not formally entail this universal proposition, nevertheless, the intellect forms it and assents to it with certainty and evidentness. And it is disposed to do so [*determinatur*] by its nature, and not by demonstrative teaching but by the aforementioned prior sensations, memories, and experiences. Therefore, this universal proposition is already a first and indemonstrable principle in natural science that nevertheless would have been initially doubtful to a man if he had never perceived fire or such coal.

(6) The sixth section also makes three claims: First, that a singular principle, known by experience or by the mediation of experience, also becomes evident to the intellect by means of an example; and this you will find explained in the treatise on dialectical loci, in the fourth part of the first chapter.[218] Second, this section states that a particular or indefinite principle becomes recognized by the intellect, by the mediation of the senses or experience, through abstraction; and this should be explained in connection with bk. 3 of *On the Soul*.[219] For the intellect, by the mediation of the senses, first forms a singular concept, just as the senses do; but immediately, by its nature, it can abstract from it and form a common concept. Furthermore, this section states in the third place that a universal principle becomes known, recognized by, and evident

218. See 6.1.4

219. See J. A. Zupko, "John Buridan's Philosophy of Mind: An Edition and Translation of Book III of His 'Questions on Aristotle's De Anima' (Third Redaction), with Commentary and Critical and Interpretative Essays" (Ph.D. diss., Cornell University 1989, 2 vols. [Ann Arbor: University Microfilms International, 1990], bk. 3, q. 8; Buridan, *Quaestiones in Aristotelis Metaphysicam,* bk. 1, q. 4.

to the intellect through induction, by the mediation of experience; and this has also been clearly explained in the treatise on dialectical loci, in the fourth part mentioned above.[220]

But then one may doubt whether such an example or induction should be called a dialectical argument or a demonstrative argument. And I reply that it is not demonstrative, for it is not a syllogism, absolutely speaking. But neither should it strictly be called dialectical, for dialectic does not produce certain and evident knowledge. Rather, it is an argument producing the knowledge not of a conclusion of a demonstration but of a principle. Therefore, it exceeds the nature of dialectical argument, for it produces not opinion but evident and certain knowledge; and it falls short of a demonstrative argument, for it does not conclude necessarily and on account of its form, and thus it is not able of itself to direct the intellect to this knowledge.

Nevertheless, it is true that if such examples or inductions were not sufficiently multiplied in several singulars, then the intellect would not rise up from this to assent to the principle with certainty and evidentness, but rather with trepidation. Therefore, examples or inductions of this kind do not then exceed the limits of dialectical arguments, for they produce only opinion.

8.6 On *dici de omni* [being predicated of everything], *per se* [by itself], and the universal, or *secundum quod ipsum* [with respect to what the thing is]

(1) Furthermore, before we start directly discussing demonstrations, it is useful to discuss *dici de omni, per se,* and *secundum quod ipsum,* or 'universal'. (2) I say, therefore, that the *dici de omni* required for demonstration adds something over and above the *dici de omni* that is required for syllogism,[221] since for a syllogism it suffices that the proposition is affirmative with a distributed subject, but for demonstration it is further required that the proposition also be true, at whatever time it may be propounded.

220. See 6.1.4.

221. See 5.1.1.

The sixth chapter of this treatise is about *dici de omni, per se,* and *secundum quod ipsum,* or 'universal'. And it contains four parts. The first is about *dici de omni,* the second distinguishes three modes of perseity relevant to demonstration, the third subdivides the first mode, and the fourth is about 'universal' or *secundum quod ipsum* [predications].

8.6.1 On dici de omni

The first part contains two sections. The first clearly lays down the aim of the chapter, and the second deals with the *dici de omni* that is properly required for demonstrations in the strict sense, namely, the ones producing enduring knowledge [*scientia permansiva*]. And it deals with this in relation to the *dici de omni* required for affirmative syllogisms formed with common terms, which have been discussed in the first chapter of the fifth treatise. And all that was said there is clear as was stated.

A Doubt

But it is usual to query in this context whether the following should be called *dici de omni* according to demonstrative science: 'Every lunar eclipse takes place by the interposition of the earth between the sun and the moon' or 'Every lunar eclipse takes place when the moon is in the head or in the tail of Draco'. And it seems that the answer is no, for this is not true when there is no lunar eclipse. Likewise, assuming that today there is no thunder, the question is whether, regardless of this, the following should be conceded to be *de omni:* 'Every thunder is a sound made in the clouds'. But I have discussed this matter several times elsewhere.[222] And now I briefly cover both ways of handling it, in turn.

The first way is that such a proposition in demonstrative science is not taken in its strict sense, for in that way it would not be knowable because it is contingent and it is false when there is no eclipse, or at least it is not true for all times. Such a proposition, however, is taken, for the sake of brevity, in place of another temporal one, which is true and knowable, namely, in place of this: 'Whenever there is a lunar eclipse, it takes place by the interposition

222. For example, 4.3.4.

of the moon between the sun and the earth'; and the same goes for the case of thunder.

The other way of handling this matter is that in the absolutely demonstrative [sciences] we do not restrict the use of the present time consignified by the verb to some determinate time; rather, we use an infinite time or all time as the present. In this sense, the aforementioned propositions, or ones similar to them, would be true whenever they happened to be propounded, although not absolutely, but for any time when the subject happened to supposit for something; but this suffices for *dici de omni* in demonstrative sciences. And this is what Aristotle remarks in bk. 1 of the *Posterior Analytics,* when he says by giving an example: ". . . as 'animal' is said of every man. And if it is true to say that something is a man, then it is true to say that it is an animal, and if now the one, then also the other,"[223] i.e., whenever a man is, he is an animal. And if one carefully considers the matter, [it is clear that] these two ways of handling the issue amount to the same point.

8.6.2 On the three modes of perseity

(1) In a *propter quid* demonstration, which is the most powerful, there are propositions, terms, and the relationship of cause to effect. As far as the propositions are concerned, we should talk about the modes of predicating the predicate of the subject *per se* and *per accidens;* as to the terms, we should talk about the modes of being *per se* and *per accidens;* and as to the relationship of the premises to the conclusion, we should talk about the modes of causing *per se* and *per accidens.* (2) Thus, the predicate is predicated *per se* of the subject if the proposition is necessary and *per accidens* if it is contingent. (3) Some terms are substantial and nonconnotative, and these are called *per se;* but others are accidental or connotative, and they are called *per accidens.* (4) But a cause is called *per se* if it is necessary that should such a cause be posited, then such an effect is or comes to be by means of this cause; and the cause is called *per accidens* if this is not necessary but rather contingent; also, a cause is called *per se* if the causal proposition is necessary, and it is called a cause *per accidens* if it is not necessary but contingent.

The second part, discussing *per se,* has four sections. (1) The first distinguishes three modes of perseity attributed to the things that figure in the most

223. Aristotle, *Posterior Analytics* I.4.73a30–31.

powerful demonstrations. And it will become clear enough once the subsequent three sections have been clarified.

(2) The second section shows which sort of proposition is called *per se,* because it is necessary, and which *per accidens,* because it is contingent; or it shows what it is for the predicate to be predicated *per se* and *per accidens* of the subject, for the former case is for it to constitute a necessary proposition and the latter case is for it to constitute a contingent one; for these ways of speaking amount to the same.

That this is the intention of Aristotle is quite clear from what he says, recapitulating [what he said earlier]: "Those, therefore, that are *per se* predicated in the sphere of the things that are knowable without qualification are either predicated so that their subjects are contained in them, or so that they are contained in their subjects, and these are predicated of necessity, for they can never fail to inhere, either in themselves, or along with their opposites."[224] Again, somewhat later he says: "Those that are truly *per se* necessarily inhere in things,"[225] and then he adds: "But accidents are not necessary."[226]

And this is also made clear by the following reasoning. Just as fire is said to be *per se* hot because it is bound by its nature to be hot, and water is not said to be *per se* hot because it is not bound by its nature to be hot, so also that proposition is said to be *per se* true that by its own and by its terms' signification is bound to be true; indeed, it is impossible, given this signification, for it to be false, and this is for it to be necessary. But a proposition is said to be *per accidens* that is not so bound [to be true], indeed, it is possible for it to be false, and this is for it to be contingent.

(3) The third section calls 'terms *per se*' those that pertain to the category of substance, and it calls 'terms *per accidens*' those that pertain to the other categories, which are denominative terms.[227] It appears that this is intended by Aristotle when he says: "Furthermore, those that are not predicated of some other subject"—i.e., denominatively, as an attribute [is predicated] of a subject—"I call *per se,*" even if they are correctly predicated of their own inferior subjects quidditatively; "those, however, that are [denominatively] predicated of other subjects [as when an attribute is predicated of its subject] I call *per accidens,*" as for example the terms 'sitting' or "'walking' or 'white'."[228] And Aris-

224. Ibid., I.4.73b16–19. For example, as Aristotle says here, a number is either even or odd of necessity, for 'number' is contained in the definition of the opposite properties of 'even' and 'odd'.

225. Aristotle, *Posterior Analytics* I.6.74b6–7.

226. Ibid., I.6.74b13.

227. Clearly Buridan considers here only concrete terms. In the category of quality, e.g., he would admit some abstract, absolute terms, such as 'whiteness'.

228. See Aristotle, *Posterior Analytics* I.4.73b5–11; here I changed the interpunction of the

totle adds: "Whatever is not [predicated] of a subject I call *per se;* but whatever is [predicated] of a subject I call an accident."[229] And we should not understand by [the phrase] 'what is not predicated of a subject' primary substance, for that does not belong to the demonstration with which Aristotle is concerned here but it is expounded in the way described. And this is what Aristotle says when distinguishing between the subjects and the attributes that can be demonstrated of them.

Accidental terms are the attributes of substantial terms. And even if both the subject and the attribute are from accidental categories, nevertheless the subject is said to be *per se* with respect to the attribute, for it is *per accidens* to a lesser extent, because an attribute always adds its connotation over and above the signification of the subject. But a substantial term is said to be *per se* [on its own] insofar as it is predicated as it were in a solitary way, because it does not add any connotation over and above the thing for which it supposits, as a connotative term does, or because the verb 'is' is *per se* attributed to a substantial term and not on account of a prior subject, but it is not attributed to an accidental term, except on account of a subject to which it is primarily attributed.[230] And this is explained by Aristotle, who in bk. 7 of the *Metaphysics* says that for something white or walking to be is nothing but for something to be which is white or walking.[231]

(4) The fourth section distinguishes between a cause *per se* and a cause *per accidens* in two ways. The first way pertains to the things that are the cause and the effect; the second pertains to causal propositions. The first way therefore clearly states that a thing is said to be the *per se* cause of a certain effect either with respect to becoming or with respect to being, given that it is necessary for every such effect to come to be or to be on account of such a cause; but if it can be or come to be without such a cause, then that cause is said to be the *per accidens* cause of such an effect. For in this way the builder is the *per se* cause of the building, for whenever a building comes to be it has to come to be on account of a builder; and this is also how light [*lux*] is the *per se* cause of illumination [*lumen*], and human sperm the *per se* cause of the generation of a human being. But in this way fire is not the cause *per se* but *per accidens* of the generation of another fire, for fire can come to be without another fire, per-

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critical text to make clear which parts are Buridan's interpretive insertions into Aristotle's text.

229. Ibid., I.4.73b9–10.

230. A whiteness or something white is said to exist only on account of the fact that a thing which is white exists and that it is white.

231. See Aristotle, *Metaphysics* VII.1.1028a20–29; *quod album aut vadens [esse] non est nisi aliquid esse quod est album vel vadens*—here I added *esse* on the basis of the critical apparatus.

haps because of the motion of the earth or the moon, or the striking of flint against steel. Nor does the melting of wax comes from the sun as from its *per se* cause, for it can come from something else, without the action of the sun.

In the second way a cause is said to be *per se* if the causal proposition is necessary and *per accidens* if the proposition is contingent. And I call a 'causal proposition' one in which a term signifying a cause is predicated of a term signifying the effect along with a word designating the relationship of cause to effect, for example, 'A man is or comes to be from prime matter and intellective soul', 'A ray of illumination [*radius luminis*] is from light [*lux*]', 'Motion is from a mover', 'The universe is from God or for the sake of God', 'The wall is white by whiteness', and so on for many other cases. If therefore such a causal proposition is necessary, then we attribute to the terms signifying the cause the predicate '*per se* cause'; and if it is not necessary, then we attribute to it the predicate '*per accidens* cause'. For example, if I say 'A building comes to be by a builder', assuming that the building does come to be, this is necessary; therefore, we say that the builder is a *per se* cause of the building. But if we assume that a builder is a musician, this is true: 'A building comes to be by a musician', but this is not necessary even assuming that the building comes to be; and so we say that a musician is a *per accidens* and not a *per se* cause of the building.

And it is clear that here we are not talking about the terms taken significatively, for this would be a valid syllogism: 'A builder is a *per se* cause of a building; and he is a musician; therefore, a musician is the *per se* cause of a building'. But we are talking about the terms and propositions taken materially so that the sense of 'A builder is a *per se* cause of a building' is that this [proposition] is *per se* true: 'A building comes to be by a builder'; and 'A musician is a *per accidens* cause of a building' has the sense that this is true *per accidens:* 'A building comes to be by a musician'.

And it can reasonably be believed that this is what Aristotle intended in bk. 1 of the *Posterior Analytics,* in bks. 2 and 3 of the *Physics,* and in bk. 5 of the *Metaphysics,* concerning *per se* and *per accidens* causes.[232] For he stated that the *per se* cause of the sculpture is the sculptor, and the *per accidens* cause is Polycletus, for it is accidental to the sculptor that he is Polycletus. And the *per se* cause of the building is the builder, whereas the *per accidens* is the flautist.

And it is this kind of distinction that is relevant to the issue of demonstrations and demonstrative science, for just as there is no science [or knowledge], strictly speaking, of contingent propositions, so there is no science, strictly speaking, [produced] by contingent and *per accidens* causal premises. Aristotle

232. Aristotle, *Posterior Analytics* II.17.99a ff; *Physics* II.3.195b9–12; *Metaphysics* V.2.1013b35–37.

therefore states this distinction so as to exclude *per accidens* causes, i.e., non-necessary causal propositions, from demonstrations. And this is why he says in bk. 5 of the *Physics:* "But *per accidens* change should be omitted."[233] And in bk. 6 of the *Metaphysics* he says that concerning being *per accidens* there is no speculation in art or science, for of things that are or come to be *per accidens* the cause is *per accidens.*[234]

8.6.3 On the first mode of perseity

(1) But we distinguish two special modes of predicating *per se* a predicate of a subject. (2) The first figures in a quidditative proposition or in a necessary causal proposition, for it is in this way that quidditative or causal definitions and their parts are *per se* predicated of their definita, as in 'Man is an animal' and 'A triangle is a figure enclosed by three lines'. (3) The second mode figures in a denominative proposition that is not causal, for this is how attributes are [*per se*] predicated of those of their subjects of which they are necessarily predicated, as in 'Man is risible' and 'A number is either even or odd'. And this second mode is in a way the converse of the first, for the predicate in the first pertained to the definition of the subject, whereas in the second it is the other way around, for an attribute is defined in terms of its subject, as has been said elsewhere.

The third part contains three sections, which are quite clear as stated. I should only remark that I do not seek the verification of the example about the triangle. For it is sufficient for my purposes that the example is taken as though the term 'by [three] lines' were a causal predicate of a triangle.

A Doubt

But questions arise concerning many propositions. First, are the propositions 'An animal is a man', 'An animal is rational' *per se?* It seems that they are not, for it is said that *per se* presupposes *de omni,* but these are not *de omni.* Likewise, if 'An animal is a man' is *per se,* then it appears to be so only in the second mode, for the subject belongs to the definition of the predicate.

233. Aristotle, *Physics* V.1.224b26–27.

234. See Aristotle, *Metaphysics* VI.2.1026b2 et seq.

Furthermore, 'An animal is rational' as well as '[Something] rational is an animal', and similarly 'A man is a man' does not seem to be in either mode, for neither does the predicate belong to the definition of the subject, nor conversely. Likewise, one queries whether '[Something] odd is a number' is in the first or in the second mode.

One also has doubts concerning the following propositions: 'A man is a risible animal', '[Something] risible is susceptible of learning', 'Every body is in a place', 'Every father is a father of a son or a daughter', 'Matter is the cause of form', 'Every creature comes from God', 'Everything that comes to be comes from something', 'Every action is passion', 'No man is a horse', 'No man is able to neigh', 'Nothing able to neigh is able to laugh [*risibile*]', 'Nothing corruptible is perpetual', 'No chimera is a chimera', 'Nothing comes from nothing', 'No father exists without a son or a daughter', 'For every man it is possible to sleep', 'For every man to sleep is possible', 'For a man it is possible to run', 'If a donkey flies, then it has wings', 'Every man runs or does not run', 'A man runs or a man does not run', 'Socrates is a man', 'Socrates is Socrates', 'Aristotle disputes', and so on for many others. And finally it is asked whether the fourth mode of *per se,* which we call the mode of causation, is distinct from the first mode, which we call the mode of predicating *per se.*

Let us respond, then, that 'An animal is a man', 'An animal is risible', 'A man is a man', and '[Something] odd is a number' are *per se,* for they are necessary. And I deny that every *per se* presupposes *de omni.* But the first grade, whether in the first or in the second mode, which we call '*per se* and primarily' [*per se et primo*], does presuppose *de omni.*

Therefore, we should note that both in the first and in the second mode there are several grades. In the first mode the first grade occurs when the quidditative definition is predicated of the definitum; the second grade occurs when a part of the definition, namely, the genus or the difference, is predicated of the definitum, namely, of the species; the third occurs when one part of the quidditative definition is predicated of another part, as when the genus is predicated of the difference or conversely.

Then indirect predications should be reduced to their direct forms with respect to their perseity. Therefore, the following are in the first mode: 'An animal is a man' and '[Something] rational is a man', and this is the fourth grade of the first mode. But '[Something] odd is a number' can be said to belong to the second mode, for it is the indirect form of 'Some number is odd', and this is in the second mode.

We should note, however, that when we say that in the first mode the predicate belongs to the definition of the subject, and in the second mode conversely, this is not to be understood universally, but [only] with respect to the first grades of these modes, and it does not have to be the case with respect

to the other cases, especially the indirect grades. But the proposition 'A man is a man' and the like, in which the same [term] is predicated of itself, are in the first mode, for no predicate can have a subject from its own category more quidditative than itself. Therefore, that could be posited as being the absolutely first grade, as Aristotle seems to indicate in bk. 7 of the *Metaphysics*.[235] But here we should not deal with such propositions, since they are not used by demonstrators. Passing over these propositions, then, the fifth grade of the first mode figures in predicating a causal definition of its definitum.

The sixth grade occurs with respect to parts of such a causal definition, namely, if the predicate signifying the cause is predicated in an oblique case of the subject signifying the effect in a causal proposition, as in 'Every creature is from God', 'Everything that comes to be comes from something', '[Something] hot is hot by heat', and 'Every fire is hot by heat'.

The seventh grade is converse and quasi-indirect; that is to say, [it obtains] if the term signifying the effect is predicated of the term signifying the cause in an oblique case in an effectual proposition, i.e., one that designates that this is the effect of that, for example, 'Fire is effective of heat', 'Matter is the subject of form', 'Form is the act of matter', 'Medicine is effective of health', 'Health is the end [purpose] of medicine', 'From stones and beams is a house', 'From a mover comes motion', and the like.

Likewise, we should also posit several modes or grades in the second mode. The first occurs if an attribute is predicated of its proper subject or of its definition, as is 'A man is risible' or 'A rational mortal animal is risible', 'Every triangle has three angles equal to two right angles', *and* 'Every number is even or odd'.

The second occurs if an attribute is predicated of its subject that is not convertible with it but is superior or inferior, as long as the proposition is necessary, as in 'A figure has three angles equal to two right angles'.

The third grade occurs if such propositions are converted into indirect ones, as in '[Something] risible is a man', '[Something] risible is an animal'.

The fourth mode occurs on account of the third, when one attribute is predicated of another attribute of one and the same subject, as in 'Action is passion' or '[Something] susceptible of learning is risible'.

The fifth mode can occur if the description is predicated of what is described, as in 'A man is a risible animal' or conversely. For although 'animal' is a *per se* quidditative predicate of man, nevertheless, the whole [phrase] 'risible animal' is not a quidditative but a denominative predicate of man, for it connotes some other disposition of man that goes beyond the signification of 'man'.

235. Ibid., VII.17.1041a10–24.

And other grades might also be posited on account of the fact that a *per se* proposition has to be necessary and that there are diverse grades of necessity, and, accordingly, of perseity. The first grade of necessity occurs when it is not possible by any power to falsify the proposition while its signification remains the same, nor [is it possible] for things to be otherwise than it signifies.

Another grade occurs when it is impossible either to falsify it or for things to be otherwise by natural powers, although it is possible supernaturally or miraculously, as in 'The heavens are moving', 'The heavens are spherical', and '[Any] place is filled'.[236]

The third grade occurs with the assumption of the constancy of the subject, as in 'A lunar eclipse takes place because of the interposition of the earth between the sun and the moon', 'Socrates is a man', and 'Socrates is risible'. These are said to be necessary in this way because it is necessary for Socrates, whenever he is, to be a risible man, and it is necessary, whenever there is a lunar eclipse, that it take place because of the interposition of the earth between the sun and the moon.

There is yet a fourth mode, which involves restriction. For just as 'possible' is sometimes predicated broadly, in relation to the present, past, and future, and sometimes restrictively, in relation to the present or the future, in accordance with what is said at the end of *On the Heavens*[237]—that no force or power can be brought to bear on the past, i.e., on that which is done, but only on that which is or will be (for we say that everything that has been necessarily has been, and cannot not have been)—the same goes for 'necessary' and 'impossible', which are also predicated either with restriction or broadly.

Therefore, we broadly claim that Aristotle can walk, for now he can, or he could, or he will be able to walk. And thus we say that [the proposition] 'Aristotle walks' is possible, as are 'Aristotle walked' and 'Aristotle will walk', for any of these can now be true or could be true earlier or will be able to be true later, and none of these is necessary or impossible. But these would be necessary according to Aristotle: 'A man is an animal', 'God is just'. Restrictively, however, we say that it is not possible for Aristotle to walk, for he cannot walk now, nor will he be able to in the future. And in this way we say that 'Aristotle walks' is impossible and that 'Aristotle neither does nor will walk' is necessary.[238]

And that sometimes philosophers interpret possibility, impossibility, and necessity broadly in this way is clear from Aristotle, who in bk. 1 of *On the*

236. Obviously, these are "necessities" only of Aristotelian physics, but, as Buridan often warns us, examples need not be verified.

237. Aristotle, *On the Heavens* I.12.283b13–14.

238. The reason is that Aristotle is dead, and the dead cannot walk.

Heavens states that 'generable' and 'corruptible' are convertible and so also are 'ingenerable' and 'incorruptible'.[239] But this is not true according to restricted possibility. For 'generable' and 'can be generated', and 'corruptible' and 'can be corrupted', signify the same. Now, according to restricted possibility, this horse, which has been generated, cannot be generated, and thus it is not generable, but ingenerable; but it can be corrupted, and so it is corruptible and not incorruptible. And in this way 'generable' and 'corruptible' are not convertible, for this horse is corruptible, but is not generable. And neither are 'ingenerable' and 'incorruptible' convertible, for this horse is ingenerable but not incorruptible. Therefore, those convertibilities are to be understood in accordance with possibility taken broadly.

Thus, therefore, in one way a proposition is said to be necessary absolutely [*simpliciter*] and *per se,* for it is not, was not, and will not be able to be falsified. In another way it is called necessary with qualification [*secundum quid*], and *per se* with qualification, and improperly, for it cannot be false now, nor in the future, although it could be false or was false. Absolute necessity or absolute perseity pertains to demonstrations properly speaking, but not necessity or perseity with qualification. When it comes to the latter, a contingent proposition that is now false turns into one that is necessary and true, or a contingent one into an impossible one. Thus the proposition 'Plato disputed' was false, but now it is true; and the proposition 'Plato disputes' was true, but now it is impossible.

Concerning the propositions 'Every body is in a place' or 'Every action is passion', it is clear that they belong to the second mode. Concerning 'Every father is the father of a child', however, one might say that it is in the first mode insofar as it is a quidditative proposition. For the concept of the name 'father' implies and connotes the concept of its correlative, namely, that of 'child', and this is explicated in the predicate 'father of a child', and thus it functions as if it were the nominal definition [of the subject]. I do not assert this here, but refer the issue to what has been said in the chapter on definitions, and even more to what has been said in the treatise *On Categories* in the chapter on relation.[240] But for now I wish to say that if the nominal definition is truly predicated of the definitum, then it is predicated of it quidditatively, and thus in the first mode, for this is a predication of the same about the same in intention, although not in utterance, for the definitum signifies or connotes nothing more nor less than does the definition, as has been said elsewhere.[241]

To the other questions one may reply that all necessary propositions are

239. Aristotle, *On the Heavens* I.11.280b7–281a1.

240. See 3.4.

241. See 8.2.3.

per se, as has been said. But in the distinction of the modes of *per se* predication both Aristotle in bk. 1 of *Posterior Analytics* and ourselves in the present context are talking properly only about affirmative categorical propositions about actuality [*de inesse*]. Concerning negatives, however, we might say that if the terms are substantial and not connotative, then those propositions are to be reduced to the first mode, as ones saying what the thing is not, as for example 'No man is a horse' or 'No whiteness is sweetness'. But if the terms are denominative or connotative, then they are to be reduced to the second mode, for they say what a thing is not like, or how big it is not, or where it is not, [etc.,] as for example, 'No man is able to neigh', 'Nothing able to neigh is able to laugh', or 'Nothing perpetual is corruptible'.

And the case is similar with propositions about possibility, necessity, or impossibility. The following are in the second mode: 'Every man can sleep', 'For every man it is possible to laugh', 'The heavens necessarily move', and 'For a horse it is impossible to laugh'. And these are in the first mode: 'For a man it is impossible to be a donkey' and 'God is necessarily a substance'.

However, modal propositions in the composite sense are not properly modals, but are about actuality. And these modes are the attributes of propositions. For saying that every proposition is either necessary or impossible or contingent or possible is just like saying that every number is either even or odd. These are thus to be placed in the second mode: 'That the heavens move is necessary', 'It is necessary that a man is an animal', 'It so happens that a man runs', and 'That a man is a donkey is impossible'.

But hypothetical propositions are not immediately composed of a subject and a predicate. Therefore, they do not have to be reduced to the modes of predicating *per se* a predicate of a subject, but they are correctly called necessary, and thus they are correctly called *per se* as well.

But propositions like 'A chimera is not a chimera' and 'A vacuum is not a vacuum', which are true on account of their terms' failing to supposit, can be said to belong to the first mode, since the same is predicated of the same, and their opposites would be true in the first mode if their terms supposited for something. But 'No place is a vacuum' or 'No vacuum is a place' is true in the second mode, for if 'vacuum' supposited for something, it would be an attribute of place.

As for the last question, it seems to me that one should say that if we call a cause *per se* or *per accidens* on account of the relation of the cause to the effect, disregarding causal propositions, as when we say that God is the *per se* cause of every being, this is not to be reduced to the modes of predicating *per se* the predicates of subjects. But if we concentrate on the distinction between *per se* and *per accidens* causes in terms of the necessity or contingency of causal propositions, then such a mode of a *per se* cause would belong to the

first mode, as a species contained under the first mode taken in general; and it was this species that Aristotle listed here among the others,[242] for it is required for demonstrations *propter quid,* which are the most powerful and principal ones among the others.

8.6.4 On 'universal', or secundum quod ipsum

> Aristotle describes 'universal' in the *Posterior Analytics* in two ways:[243] first, by saying that a proposition is said to be universal if it is such that when it is *de omni* [of everything] and *per se* [by itself], then it is also *secundum quod ipsum* [with respect to what the thing is]; second, by saying that that proposition is universal which is *de omni* and *per se* and *primo* [primarily]. And thus he seems to mean the same by *primo* and *secundum quod ipsum.*

The text of the fourth part is plain, if we see what we should understand in it by *primo* and by *secundum quod ipsum,* and if we see the difference between calling a proposition universal insofar as it pertains to the most powerful demonstration and insofar as this suffices for a syllogistic form that holds by virtue of *dici de omni* and *dici de nullo.*[244] I say, therefore, that a proposition is said to be universal, insofar as this is required for a syllogistic form, if it has a common distributed subject, as for example 'Every B is A' or 'Every man runs'. But, in order that a proposition should count as universal in the sense in which we here talk about universality, it is required that it be true and necessary, and further that the predicate be predicated of the subject primarily [*primo*] and *secundum quod ipsum* [with respect to what the thing is], so that it should be verified of it with the reduplication *secundum quod* [insofar as], as in 'A man is risible insofar as he is a man'.

Now, then, we should see what we should understand by [the phrase] 'a predicate is predicated primarily of the subject'. And it is clear that in one way we call the same propositions both primary [*primum*] and immediate. In this way we say that every indemonstrable principle of a demonstration is primary, or that it is a first proposition [*propositio prima*], because it has no prior proposition by which it could be demonstrated. And thus it is also clear that no demonstrable conclusion would be first and 'with respect to what the thing

242. See Aristotle, *Posterior Analytics* I.24.85b23 ff.

243. Ibid., I.4.73b32–33.

244. See 5.1.2.

is' [*secundum quod ipsum*], if we understand the same by both first and 'with respect to what the thing is'.

To say this, however, would be to go against Aristotle, who states that the conclusion of the most powerful demonstration is primary [*de primo*] and universal. For he says: 'We have a universal when it is demonstrated of each and primarily ';[245] but that which is demonstrated is the conclusion. And he also says that to have three angles equal to two right angles is what we predicate primarily of a triangle, and yet the proposition that a triangle has three [such angles] is not indemonstrable. It seems, therefore, that by 'predicating a predicate primarily of the subject' Aristotle was alluding to convertibility. And this is clear, because he says that 'first' and 'with respect to what the thing is' require *dici de omni* [being predicated of everything].[246] Therefore, the following is neither primary nor 'with respect to what the thing is': 'A figure has three angles equal to two right angles'.

Next, taking *de omni* as given, it is required in the second place that the elimination [*remotio*] of the subject entail the elimination of the predicate. And so he says that this is not primary [*de primo*]: 'Every isosceles has three angles equal to two right angles', for if nothing were an isosceles, there would still be [something] having three angles, for an equilateral triangle would still have three, etc.[247] And so in accordance with this analysis [*determinatio*] of Aristotle's, a genus is not predicated primarily and with respect to what the thing is of its species or difference or the definition of the species, although such a proposition is first, i.e., indemonstrable, for, even if there were no man, nor [something] rational, nor a risible animal, still 'animal' would not have to be universally denied [*removeri*], for a horse or a donkey would still be an animal.

And if someone were to ask what the nature [*ratio*] of primacy [*primeitas*] in a convertible proposition is, given that it is neither immediate nor indemonstrable, I respond that Aristotle in bks. 5, 6, and 7 of the *Physics,* and in a number of other places, calls 'primary' [*primum*] that which is on account of the whole and with respect to the whole, and he calls 'not primary' [*non primum*] that which is only on account of a part or *per accidens* [coincidentally]. Therefore, a proposition with convertible terms is said to be primary in this way because it is true on account of its whole subject and its whole predicate; but others do not hold in this way. For example, 'Every man is risible' is indeed true on account of any man and on account of anything risible, indeed, this is the reason why it is converted into 'Everything risible is a man'. But

245. Aristotle, *Posterior Analytics* I.4.73b32–33.

246. Ibid., I.5.74a26–33.

247. Obviously, here we should interpret 'isosceles' as 'having exactly two equal sides' and not as 'having at least two equal sides'.

'Every man is an animal' is true on account of its whole subject, for it is true on account of any man, but it is not true on account of the whole predicate, i.e., not on account of 'animal', because not on account of the animals that are not men. Therefore, it is not converted into 'Every animal is a man' but into a particular [proposition].

We could note, however, that someone might distinguish three grades within 'primary' [*primo*] or in 'with respect to what the thing is' [*secundum quod ipsum*]. The first would be that according to which 'primary' or 'with respect to what the thing is' would indicate immediacy and convertibility together; the second, that according to which they would be taken to indicate immediacy, whether there is convertibility or not; and the third, that according to which they would be taken to indicate convertibility, whether there is immediacy or not. And it is in this last way that we intend 'primary' and 'with respect to what the thing is' to be taken, in keeping with Aristotle.

8.7 On the various distinctions of demonstrations

(1) A demonstration is a syllogism producing knowledge, i.e., one that produces the knowledge of the conclusion from the knowledge of the premises. (2) Therefore, just as a conclusion can be said to be known[248] in general, strictly, and most strictly, so too [something is said to be] a demonstration [in these three ways]. Something is called a demonstration in general because it produces knowledge in general, it is called a demonstration strictly speaking if it produces knowledge in the strict sense, and it is called a demonstration most strictly if it produces knowledge in the strictest sense. (3) In accordance with what was determined earlier, we call knowledge of a conclusion in general a cognition of the conclusion that is steadfast [*adhaesiva*] along with certainty and evidentness, whether the conclusion is universal or singular and whether it is contingent or necessary. (4) We call the knowledge of the conclusion in the strict sense a cognition that is steadfast and enduring [*mansiva*] and one that enables someone to teach [*doctrinalis*] with certainty and evidentness; and such

248. Here I omitted the critical text's *dupliciter, scilicet* (in two ways, namely), because the subsequent division is threefold.

is not a cognition of some singular or contingent conclusion. (5) But we call the knowledge of the conclusion in the strictest sense a cognition that is steadfast, etc., not only with respect to how things are [*quia ita est*] but also with respect to the reason why things are so [*propter quid ita est*]. (6) A demonstration in general is described as being a syllogism producing knowledge; a demonstration in the strict sense is described as being a syllogism producing enduring knowledge; and a demonstration in the strictest sense is described as being a syllogism producing enduring knowledge along with the reason why things are so.

This is the seventh chapter of this treatise. It propounds several diverse distinctions of demonstrations. It has ten parts, corresponding to ten distinctions.

8.7.1 On demonstrations in general

(1) The first part contains six sections. The first provides the most general definition of demonstration, which applies to all demonstrations. And this has been sufficiently covered in the second part of the fourth chapter of this treatise.[249]

(2) The second section, accordingly, presents three modes of interpreting the name 'knowledge of the conclusion', namely, in general, strictly, and most strictly. And this is clear.

(3) The third section describes knowledge of the conclusion in general. And this description was clear enough in the fourth chapter.

(4) The fourth section describes knowledge of a conclusion in the strict sense. For although the name 'knowledge of the conclusion' in general covers any cognition that is steadfast with certainty and evidentness, nevertheless, philosophers taking 'knowledge' in the strict sense restrict it to enduring knowledge that enables one to teach, as will be explained later.

(5) And further, those who take the name 'knowledge of a conclusion' in the strictest sense restrict it to enduring knowledge that incorporates knowing the reason why [*propter quid*]. And these senses are not taken to the exclusion of one another, but one is superior to the other. For any enduring knowledge enabling one to teach is knowledge, but not conversely; and any enduring knowledge that incorporates knowing the reason why is enduring knowledge, but not conversely. And from these points it is clear that the fifth

249. See 8.4.2.

section describes the name of 'knowledge' in the strictest sense. But how these modes [*acceptiones*] [of knowledge] pertain or do not pertain to contingent or singular [propositions] will be explained later.

(6) The sixth section clearly describes demonstration in general in terms of producing knowledge in general. For we predicate in general that which we predicate without some restrictive determination. Therefore, taking the name 'demonstration' in general, we should say that it is a syllogism producing knowledge. But a demonstration strictly speaking is described in terms of producing knowledge in the strict sense, namely, enduring knowledge. And the same goes in its own way for demonstration in the strictest sense.

A Doubt

But it is reasonable to ask whether the description 'a syllogism producing knowledge' applies to all demonstrations. And it seems that it does not, for there can be, and there often are, several demonstrations to prove the same conclusion as to how things are [*quia est*]. I posit, therefore, that the conclusion 'Every B is A' is demonstrable by several demonstrations and that it has already been proved by the best of these, say, by means of the middle term C; and so it is known with certainty and evidentness without fear [of the opposite being true]. Let, then, another demonstration be added by means of the middle term D. This does not produce knowledge of this conclusion, for that has already been produced, and an agent does not produce, although it perhaps conserves that which has already been produced. Therefore, [not every demonstration is a syllogism producing knowledge]. And I can already concede this argument and expound the definition, namely, that every demonstration is a syllogism producing knowledge of its conclusion, if it has not been known by means of another demonstration.

8.7.2 On categorical and hypothetical demonstrations

Demonstrations in general are divided into several types, for some are called categorical and others hypothetical. A categorical demonstration is one that has a categorical conclusion and categorical premises; a hypothetical demonstration is one that has either a hypothetical conclusion or a hypothetical premise, for example, 'If there is an eclipse, then the moon

is either in the head or the tail of Draco; but there is an eclipse; therefore, the moon is either in the head or the tail of Draco'.

The second part posits a division of demonstrations made clear by the explanation of its members. Hence we should note that a demonstration or a syllogism is not a categorical proposition but a hypothetical one, as has been said elsewhere.[250] But in a conventional manner [*ad placitum*] we now call a syllogism *categorical* in accordance with the exposition just given.

We do not need to say much about hypothetical demonstrations. They are constructed in the same ways as are hypothetical syllogisms, provided the premises are certain and evident and the conclusion is not such before it is demonstrated, although it is propounded. Therefore, a conditional demonstration, as has been said, proceeds from two conditionals, for example 'If every B is A, then every C is A, and if every C is A, then every D is A; therefore, if every B is A, then every D is A'. There are also demonstrations based on disjunctive propositions, such as this: 'Every man is rational or some man is irrational; but no man is irrational; therefore, every man is rational'. Likewise, [some demonstrations] from conjunctive propositions, for example, 'Some number is even and some is odd [and none is neither];[251] but four is a number and is not odd; therefore it is even', and similarly from temporal propositions, e.g., 'Whenever the earth is diametrically interposed between the sun and the moon, the moon is eclipsed; but whenever, in the opposition of the sun and the moon, the moon is either in the head or in the tail of Draco, then the earth is diametrically interposed between the sun and the moon; therefore, etc.'. And the same could be said about 'wherever', 'however many times', and so on.

8.7.3 On ostensive and indirect demonstrations

(1) In another way demonstrations are divided into ostensive and indirect [*ad impossibile*]. An ostensive demonstration is a syllogism producing knowledge of the conclusion from known premises. (2) An indirect demonstration is a syllogism proceeding from a premise that is the opposite of the conclusion to be demonstrated and from another known prem-

250. See 5.1.3.

251. *Aliquis numerus est par et aliquis est impar.* This is clearly meant by Buridan as an exhaustive division, the exhaustiveness of which is required for the validity of the argument.

ise, and concluding to a conclusion that is evidently false or impossible, from which evident falsity or impossibility one concludes that the premise opposed to the conclusion to be proved is false or impossible, and, consequently, that the conclusion to be proved is true.

The third part provides a division of demonstration in general. And it is clear from the explanation of its members [here provided]. And if there is anything more to be said about indirect demonstration, it will be said later.

8.7.4 On affirmative and negative demonstrations

(1) Again, some demonstrations are affirmative, some are negative. An affirmative demonstration is one whose conclusion is affirmative, and a negative demonstration is one whose conclusion is negative. (2) And it is clear from bk. 1 of the *Prior Analytics* that if a demonstration is purely categorical and ostensive, then an affirmative demonstration proceeds from affirmative premises, and a negative one from one affirmative and one negative premise.

The fourth part presents the division of demonstrations into affirmative and negative ones. And the division is clear from the explanation of its members. But it is also added that every affirmative demonstration proceeds from affirmative premises, and a negative one from one affirmative and one negative premise, provided, however, that three conditions are fulfilled. The first is that the demonstration be purely categorical. And I call a demonstration 'purely categorical' if it does not have a hypothetical premise, nor does it contain a hypothetical extremity, for otherwise there could be a counterinstance in the following argument: 'Every magnitude is either finite or infinite, but no magnitude is infinite; therefore, every magnitude is finite'.

The second condition is that the demonstration contain [only] finite terms, for, as has been shown in the treatise on syllogisms,[252] changing the terms with respect to finitude and infinitude, a negative [conclusion] correctly follows from two affirmative [premises]. The third condition is that the demonstration be ostensive, for an indirect demonstration that ultimately proves a negative conclusion concludes syllogistically from affirmative premises to an affirma-

252. See 5.9.3.

tive conclusion,[253] and one that demonstrates an affirmative [conclusion] from an affirmative and a negative premise has a negative conclusion. But these cases will be discussed in more detail later.

8.7.5 On the division of demonstrations with respect to quantity

(1) Furthermore, demonstrations are classified according to the quantity of the conclusion. Some are said to be universal, because they produce knowledge of a universal conclusion; (2) others are said to be particular or indefinite, because they produce knowledge of particular or indefinite conclusions; and still others are said to be singular, because they produce knowledge of singular conclusions.

The fifth part also provides a division that is clear in terms of the explanation of its members. But I do not take 'universal' here insofar as it signifies the same as 'primary' [*primo*] or 'with respect to what the thing is' [*secundum quod ipsum*], but insofar as we call a proposition universal if it has a common distributed subject, as for example 'Every B is A' or 'Everything white is colored'. But from the *Prior Analytics* it becomes obvious from which syllogistic modes a universal conclusion can be inferred and consequently demonstrated if the premises are evident, as opposed to those in which only a singular, indefinite, or particular conclusion emerges. But a singular conclusion requires that one of the premises be singular, as in 'Every feverish [patient] needs to abstain from wine; he is a feverish [patient]; therefore, he needs to abstain from wine'.

A Doubt

But one may doubt what we say here, namely, that some demonstrations have singular conclusions, for this is clearly denied by Aristotle in bk. 7 of the

253. For example, if I intend to prove the negative proposition not-p by an indirect demonstration, then I can use a syllogism: p and q; therefore, r, in which both premises and the conclusion are affirmative, but, on the basis of the falsity or impossibility of r and the truth or necessity of q, I ultimately conclude to the falsity or impossibility of p, i.e., to the truth or necessity of not-p.

Metaphysics, especially if the things signified by the singular terms are corruptible.[254] For he says that of these we do not have demonstration, nor definition, nor knowledge; for if they are destroyed, the knowledge would be turned into ignorance, and, as he says, knowledge cannot be sometimes knowledge and sometimes ignorance. And Porphyry, on the basis of the authority of Plato, says that singulars should be abandoned by art and that there cannot be a discipline about them, for they are infinite.[255]

But I say that in fact there are indemonstrable, first, and immediate principles, truly known with certainty and evidentness, that are singular propositions, as has already been said, and from these, with other universal and evident principles, one can evidently conclude to singular propositions that were earlier dubious. And so, by such a syllogism the intellect is disposed to assent to these conclusions with certainty and evidentness. Therefore, these conclusions are truly known, and those syllogisms are truly demonstrations. And this is again obvious from the discussion of Aristotle in bk. 6 of the *Ethics,* where it is made clear that prudence and art are intellectual virtues by which it is not possible to state something false; however, as is clear in the same passage, many conclusions of prudence and art are contingent and singular.[256] But these conclusions are not [merely] opinions, for with an opinion one may state something false, especially in contingent matter; therefore, they are known. They are [acts of] cognition with certainty and evidentness, for if this is not the case, then nothing prevents falsity from arising here any more than in opinion.

These points seem to be rather strange, however, for if a conclusion of prudence is singular, contingent, and true, does it not become false at once on account of the destruction and change of the thing? But then why is it not possible for prudence to say something false? And I respond that prudence and art never have a false conclusion. To illustrate this point, I provide some examples concerning them. A doctor using his art of medicine argues as follows: 'Every feverish person having high fever should abstain from wine; this person is having high fever; therefore, [this person should abstain from wine]'. Although the major is posited as necessary and universal, the minor and the conclusion are contingent and singular. And it is clear that, since this is a syllogism of art, the premises and the conclusion have to be true, evident, and certain. And this is the case when art is arguing in this way. But, when this person has perhaps been cured, a syllogism from the same premises and in the

254. Aristotle, *Metaphysics* VII.15.1039b27–1040a7.

255. Porphyry, *Isagoge, translatio Boethii,* ed. L. Minio-Paluello (Bruges: Desclée and De Brouwer, 1966), p. 12, ll. 9–13.

256. Aristotle, *Nicomachean Ethics* VI.3.1139b16–18.

same syllogistic form would no longer be a syllogism of art. And if someone still assented to these premises and to the conclusion, then he would assent to them on the basis not of art but of false opinion.

Likewise, where prudence is concerned, a prudent judge hears Socrates, who demands from Plato ten pounds that he says Plato owes from a loan. But we posit [the case] that Plato never had anything from Socrates; therefore, he truly and rightly denies the debt. Socrates, however, presents two or three false witnesses against Plato, whom the judge hears. And the opposing party, despite all possible effort to the contrary, cannot show that they are not of good reputation and not persons who should be commonly judged to be trustworthy. Therefore, they present evident testimony for Socrates against Plato, and so the judge, with prudence, sentences Plato to pay the demand with expenses. But is not the conclusion false, and are not falsities here allowed into the premises?

And I reply negatively. For the judge does not conclude that Plato had ten pounds from Socrates, neither did he accept, in the prudential syllogism, that the witnesses are good people, nor that they tell the truth, but he argued with prudence thus: 'If the plaintiff in such a case establishes the claim against a defendant by two or three trustworthy witnesses of good reputation and without any previous record, then the judge should sentence the defendant to pay the claim of the plaintiff with expenses, and to enforce the payment; but this has been established against Plato and I am the judge; therefore, I sentence you, the defendant [to pay the claim of the plaintiff with expenses]'. But it is clear that all these, namely, the premises and the conclusion, are true; and the judge justly and fairly condemns him, even if he is not culpable in anything. For it is possible to do injustice justly, and conversely, as we should see in more detail in moral philosophy.

Therefore, it is clear in the aforementioned example concerning the art of medicine that if the assent by which the doctor assents to the conclusion and to that premise, namely, that Socrates has fever and he needs to abstain from wine, remains in this doctor even after Socrates has been cured, then this assent, which had been true knowledge with certainty and evidentness, will turn into a false opinion. And the same may happen in the case of prudence. Therefore, I would concede that for prudence it is possible to be false opinion, but it is impossible for prudence to be opinion.[257] And so it appears to me that

257. Obviously, the difference is that the possibility is conceded in the divided sense but not in the composite sense. That is to say, the very same cognitive act that is now prudence can stay in existence and become (false) opinion on account of some change in its object, but it is impossible that the same cognitive act should be prudence and (false) opinion at the same time.

in art or prudence it may be possible to say something false, but it is not possible for art or prudence to say something false, just as for something white it is possible to be black, but it is impossible that something white should be black. But the authoritative claims of Aristotle and Porphyry are not stated concerning knowledge and demonstration in general, but in the strict sense. And this will be more evident later.

8.7.6 On universal and particular demonstrations

(1) In another way demonstrations are divided into universal and particular ones, insofar as 'universal' signifies the same as 'primary' [*primo*] and 'with respect to what the thing is' [*secundum quod ipsum*]. And a demonstration is called universal if its conclusion and premises are with respect to what the thing is . (2) And one is called particular if the conclusion or one of the premises is not with respect to what the thing is.

The division provided in the present sixth part is clear enough if we take into account the preceding points.

8.7.7 On necessary and contingent demonstrations

(1) Further, some demonstrations have a necessary conclusion, others a contingent one. (2) Those that have a necessary conclusion have necessary premises, as Aristotle seems to assert,[258] (3) and those that have a contingent conclusion have at least[259] one contingent premise.

The seventh part has three sections. The first presents a division of demonstrations. And it is clear in itself, provided one grants the existence or possibility of demonstrations yielding contingent conclusions. But Aristotle seems altogether to deny this. For he puts in the definition of 'knowing' the clause

258. Aristotle, *Posterior Analytics* I.33.88b30–32.

259. Here I opted for the reading *saltem,* instead of the critical text's *solum* (only), on the basis of the critical apparatus. Professor de Rijk has accepted my reasons for this reading in correspondence.

"for it is impossible to be otherwise,"[260] and later he says: "For it is impossible for that of which there is knowledge absolutely speaking to be otherwise; and thus that which is knowable by demonstrative science will be necessary,"[261] whence he concludes: "Therefore, a demonstration is a syllogism from necessary [premises]."[262] And he declares the same in bk. 1 of the *Ethics,* where he says, "We all assume that what we know cannot be otherwise; but of those things that can be otherwise, when they get out of sight (i.e., when they get removed from the senses), we do not know whether they exist or not";[263] and he concludes: "therefore, what is knowable is of necessity."[264] He also determines the same in bk. 7 of the *Metaphysics,*[265] for he expressly concludes to the absurdity that, if there were knowledge of singular, contingent, and corruptible things, then it would follow that knowledge sometimes might be knowledge and sometimes ignorance or deception; for these things, if they are destroyed, are no longer evident to those who have knowledge of them, when the things have been removed from the senses.

But these authoritative claims notwithstanding, we should hold that there are demonstrations and true knowledge of contingent things, as has been sufficiently explained in the fifth part of this chapter, and since this is what Aristotle intends in bk. 2 of the *Posterior Analytics;* indeed, of these there are demonstrations *propter quid* [knowing the reason why the thing is (thus and so)]. Therefore, here he discusses their causal demonstrative middle terms, and he says that of those things that not always but frequently occur, the middle [i.e., the cause referred to by the middle term of a causal demonstration] also has to occur frequently [but not always]. And he clearly illustrates the cases of knowledge and demonstration *propter quid* concerning some contingent effect, with regard to its actual existence, its past existence, and its future existence. For a good astronomer knows that today there is a lunar eclipse because [*propter hoc*] today the earth will be located diametrically between the moon and the sun; and he knows this also because he knows that today there is an opposition of the sun and the moon, and that the moon is in the head or the tail of Draco; and he also knows[266] that there will be a lunar eclipse on such and such a day, because he knows that on that day the earth will be between the

260. Aristotle, *Posterior Analytics* I.2.71b12.
261. Ibid., I.4.73a21–23.
262. Ibid., I.4.73a24–25.
263. Aristotle, *Nicomachean Ethics* VI.3.1139b20–22.
264. Ibid., VI.3.1139b23.
265. Aristotle, *Metaphysics* VII.15.1039b31–33.
266. I have taken this reading from the critical apparatus.

sun and the moon. And this knowledge of the astronomer and its demonstrations of this sort are with the certainty and evidentness that are required for natural science, although they can be falsified by supernatural power.

We should reply, therefore, to the authorities referred to in support of the contrary position that they should not be understood as concerning knowledge and demonstration in general, but only in the strict sense, which we shall discuss later.

(2) The second section of this part states that every demonstration that has a necessary conclusion has necessary premises, as Aristotle seems to assert. And here it is to be declared that I do not believe this conclusion to be true without qualification, namely, that every demonstration having a necessary conclusion has to have necessary premises, nor do I take Aristotle to have intended this where he stated this conclusion.[267] But this is true for demonstrations *propter quid,* which Aristotle discusses here, or even for knowledge and demonstration in the strict sense, which are enduring [*permansiva*], as will be explained later.

That a necessary conclusion that has previously been dubious can be demonstrated by means of a contingent premise and be known with certainty and evidentness can be justified as follows. Many can doubt, although they know that the sun heats, that it generates fire by its light, for they did not see this, nor do they imagine how it would come about. And then this will be demonstrated and it will become known to them thus: 'Everything that burns and inflames something combustible and flammable can produce fire, but the sun burns and inflames something combustible; therefore, the sun can produce fire'. The premises are evident from [experience with] concave mirrors, and the consequence is evident. Therefore, this syllogism produces knowledge of the conclusion, and is a demonstration, even if the conclusion is necessary and the minor is contingent.

(3) The third section states that every demonstration of a contingent conclusion has one contingent premise. And this is clear, for if they both were necessary, then the conclusion would have to be necessary; for necessaries entail only something necessary, just as truths entail only something true.

8.7.8 Some other divisions [of demonstrations]

Some demonstrations are about the present, some are about the past, some are about the future, some are about actuality, and some are modal.

267. Aristotle, *Posterior Analytics* I.33.88b30–32.

The two divisions of demonstrations given in the present eighth part are clear, for it is in these ways that one can syllogize of necessity and infer the conclusion based on [syllogistic] form; and so also one can demonstrate, if the known premises are propounded so as to prove a doubtful conclusion.

8.7.9 On enduring and doctrinal demonstrations

(1) Some demonstrations we call enduring [*mansiva*], for they produce enduring knowledge, despite the changes of things and the passage of time, provided reason is preserved. Others, which do not produce such enduring knowledge, we call nonenduring. (2) Furthermore, some we call doctrinal, others nondoctrinal. The doctrinal ones are those by which we can teach students who know the customary significations of utterances without the presence of the things signified, and by writing down these demonstrations in books we can also teach their successors [the same conclusions].[268] (3) And we call nondoctrinal those by which we cannot do this. And we said that the name 'demonstration' in the strict sense is restricted to such enduring and doctrinal demonstrations.

The ninth part provides two divisions of demonstrations and describes their members. And it says that the names 'demonstration' and 'knowledge' in the strict sense are predicated only about [instances of] enduring and doctrinal [*doctrinalis*] knowledge and demonstration. And this is so because it is in this strict and restricted sense that Aristotle is talking wherever he says that there is no knowledge of contingent or singular entities, but that every science is of universals and of things that cannot be otherwise or that are necessary, perpetual, and incorruptible. An enduring demonstration, therefore, is one by which we know the conclusion, and as long as we have the demonstration and we do not forget any of it, we know the conclusion through it. For it is in this way and through such demonstrations that we know the conclusions of Euclid's geometry.

But a contingent conclusion, e.g., that the moon is eclipsed today, is not known in this manner, nor would it be demonstrated by a demonstration of this kind. For example, if it is demonstrated to you that the moon is eclipsed today, because today the earth is diametrically between the sun and the moon,

268. Here I follow the Hubien text, because, in view of the first half of this sentence, the critical text's *easdem significationes* (the same significations) does not seem to make good sense.

and then this argument remains with you till tomorrow, or tomorrow you construct another one entirely similar to this one from the same terms and propositions and in an entirely similar form, and you do not forget any of it, and you carefully consider this argument, it will not make you know that conclusion; indeed, you will know that the conclusion is false and that a premise is false.

That syllogism is said to constitute an enduring demonstration which is such that someone who possesses it or its like at any time would thereby be able to know its conclusion and would [actually] know the conclusion, were he duly related to its premises. But a nonenduring demonstration is a syllogism that brings about knowledge of its conclusion at some determinate time but cannot bring about such knowledge of its conclusion at some other time. A piece of enduring knowledge, therefore, is one produced by an enduring demonstration, and a piece of nonenduring knowledge is one produced by a nonenduring demonstration. A property [*proprietas*] of enduring knowledge and demonstration, therefore, is that an enduring demonstration is never turned into a nondemonstrative syllogism by the passage of time or by a change in the subjected thing, nor is a piece of enduring knowledge turned into ignorance or false opinion without the intervention of any forgetfulness. But a syllogism that is a nonenduring demonstration can in this way be turned into a nondemonstrative syllogism, and knowledge into opinion, as I said earlier.

And some people call enduring demonstration and knowledge 'demonstration' and 'knowledge' without qualification, whereas they call nonenduring demonstration and knowledge 'knowledge' and 'demonstration *as of now*' [*ut nunc*]; and I concede this without further ado, for names signify by convention [*ad placitum*].

As to the other division, which is a division of demonstrations into doctrinal and nondoctrinal, it is clear that in accordance with the aforementioned nominal definition there cannot be a doctrinal demonstration of singular conclusions, nor by means of singular premises, because we do not carry with us the things we dispute about[269] to school in order to teach the students, nor do we put them into our books; and we cannot recognize a thing in its singularity that we do not or did not have in our sight. So the words of teachers and of books do not produce in students singular concepts but common ones. And this has to be explained in connection with bk. 7 of the *Metaphysics*.[270] It has also been stated at the beginning of this treatise.[271]

And this is also obvious if one carefully considers the laws and decrees

269. See Aristotle, *On Sophistical Refutations* 1.165a6–8.

270. See Buridan, *Quaestiones in Aristotelis Metaphysicam,* bk. 7, q. 18.

271. See 8.1.6 (2).

given to us in [legal] books, which at first may appear to be given in singular cases and conclusions. Let us posit therefore that in a legal book it is written as a law or decree that Tycius and Bertha entered a marital contract by means of words concerning the future, and there followed their carnal union. Later on, Robert and Bertha enter such a contract by means of words about the present and they intend to pursue their marriage in the way and form usual in the church. But Tycius reclaims Bertha. The question is whether Bertha should be judged as having to stay with Tycius. And it is written in the law that she should. Now is this not a legal doctrine, given to us by the books, presenting a singular conclusion about a singular case and conveyed by means of singular premises?

And I respond that perhaps the originally singular case was propounded in singular terms before the judge concerning Tycius and Bertha, who appeared before him, and he delivered sentence in singular terms thus: 'You, Bertha, will stay with Tycius'.[272] But then I say that the student listening and the professor reading this law or decree do not have any singular concepts of them. For they do not know either Tycius or Bertha, but they do understand that a certain man was called by the name 'Tycius' and a certain woman by the name 'Bertha', not that they were called by the names I am uttering now, but by similar names.[273] And they also understand that the man and the woman called by these names had their case before that judge and that that judge delivered this sentence, not by uttering the words I am uttering now, but similar ones: 'I judge now that you, Bertha, will remain with Tycius'. And the law intends the conclusion that in every such case the judge should deliver such a decision.

And it is obvious that the propositions of all such narrations, proposals, considerations, and conclusions are in common terms. And for this reason all concepts of professors and students [as such] are common concepts.

Indeed,[274] in connection with this point I posit something that is an apparently insoluble case in law. Let there be two men both of whom are called 'John Martin' of the diocese of Artois, who are so perfectly similar to one another that nobody can tell the difference between them. Let Henry Robert

272. See *Corpus iuris canonici pars IIa: Decretalium Collectiones* IV.5.7 (Decretum Gregorii IX Papae, 1227–1237). This is Professor de Rijk's reference. A similar query is raised and a similar judgment is delivered (namely, that the woman should stay with the first spouse) in *Decretalium Gregorii Papae* IX, bk. IV, tit. IV, chap. 3, in *Corpus Juris Canonici Academicum* (Basel: Impensis Emanuelis Turneysen, 1783), but not with the singular terms referred to by Buridan.

273. That is, not by numerically the same utterances, which at that time did not even exist, but by similar utterances.

274. Reading *immo* from the apparatus instead of *primo* (in the first place) of the text.

drag one of these to court, demanding from him the ten pounds that he had let him have, and he correctly proves against him what is intended; and let there be a day assigned for them to hear the definitive sentence. This John, therefore, fearing the sentence, is thinking: "I should certainly take with me the other [John Martin], for he is similar to me and is called by a similar name"; and so he does. Then, Henry Robert, the plaintiff, on being called, says: "Present, your honor." John Martin is called, but both say: "Your honor, what do you want from me?" The judge says: "You are supposed to be here to hear the sentence." But both exclaim, surprised: "Truly, your honor, I have never appeared before you on another occasion, and I have never litigated with any man." The judge turns to Henry: "Which one of these did you sue?" He will have no way to say 'this' rather than 'that', for he does not see any difference between them, except that this one is sitting here and the other there, which is irrelevant.

Should the judge condemn both for the whole amount demanded, or for one half of it, or neither, or this one and not the other? He should not proceed in the last way, for he does not have any reason to condemn this rather than the other. He will not condemn both, whether for the whole amount or for half of it, for he knows that one of them is innocent, nor does the adversary claim that he had ever lent money, except to one of them. But if he condemns neither, then the evil and malicious one will commit many more injustices and, for the same reason as before, he will never be condemned. Let this be solved by a jurist.

But I advanced all these points only in order for it to become apparent that all our words produce in the listeners common concepts about the things signified and not singular ones, unless these things are or were within their view, so that by means of a demonstrative pronoun one could say 'I', 'you', or 'he'.[275] And Aristotle was absolutely aware of this point and noted, in bk. 1 of the *Rhetoric,* the difference between doctrinal and nondoctrinal knowledge, art, and prudence, and the way laws are universal, by saying: "The judgment of legislators is not particular [*secundum partem*] but concerns future things and universals; but the prefect [*praefectus*] and the judge consider things already present and determinate."[276] And in bk. 6 of the *Ethics* he called the knowledge and demonstrations of art and prudence, by which the artist and the pru-

275. Obviously, these are personal pronouns; however, the point Buridan intends to make is clear: we can use these pronouns "demonstratively," i.e., to pick out one unmistakably identifiable individual, only if that individual can actually be pointed out within view of the interlocutors.

276. Aristotle, *Rhetoric* I.1.1354b5–8.

dent man perform some external work, 'practical' [*usuales*], saying that these involve universals and singulars, but in most cases singulars.[277]

8.7.10 On propter quid *and* quia *demonstrations*

(1) Furthermore, Aristotle presents a division of demonstrations according to which some are called *propter quid* [knowing the reason why], and others *quia* [how the thing is]. (2) I call a demonstration *propter quid,* in a rather strict sense, that which produces the knowledge of why the conclusion is true [*propter quid ita est*], and [it] also [does so] appropriately, and it has to proceed by the proper cause. (3) But a demonstration *quia* is contrasted by him with the aforementioned demonstration *propter quid,* so that every demonstration is to be called *quia* that is not *propter quid* in accordance with the previously given description. (4) Therefore, it follows that there are two kinds of *quia* demonstrations; one is that which does not proceed by a cause, and the other is that which does proceed by a cause, but not by the proper cause.

The tenth part has four sections. (1) The first presents a division. And its import is obvious by means of the following sections, which explain its members.

(2) The second section expounds what Aristotle calls a demonstration *propter quid,* in a rather restricted sense, for a thing does not exist just because of its immediate and proper cause, be this in the genus of efficient, or final, or of any other cause, but also because of its common or remote cause. Therefore, a demonstration by means of a *per se* common or remote cause does not only produce knowledge of how something is [*quia ita est*] but somehow also why it is so [*propter quid ita est*]. Therefore, it is appropriate to call such a demonstration *propter quid* and to divide such demonstrations into those that are based on the proper cause and those that are based on a nonproper cause. But since we can use names as we will [*ad placitum*], let it be allowed that we call *propter quid* only that which is based on the proper cause.

(3) The third section declares the understanding [*acceptio*] of this second member, namely, that it is in accordance with our will that we want to call all demonstrations *quia* that are not *propter quid* in accordance with the previously provided acceptation.

277. See Aristotle, *Nicomachean Ethics* VI.8.1141b14–22.

(4) Therefore, the fourth section clearly concludes that there are two sorts of demonstrations *quia.* And it is obvious that there are three kinds of demonstration propounded here: one by means of the proper cause, another by means of the nonproper cause, and the third by means of a noncause.

8.8 On *propter quid* demonstrations

(1) There are several questions concerning *propter quid* demonstrations. One of these is: Since to know *propter quid* is to know by means of the cause, how, what, and of what sort should this cause be? (2) And we should not say that a demonstration is *propter quid* because the premises are the causes of the conclusion. (3) Nor does it suffice that the knowledge of the premises should be the cause of the knowledge of the conclusion. (4) But it is required either that the causal term placed in the premises and in the conclusion signify the cause of things' being in the way signified by the remainder of the conclusion, or that the middle term signify appropriately the cause of things' being in the way signified by the conclusion.[278]

The eighth chapter discusses demonstrations *propter quid* in particular. And it contains six parts: the first two are two questions, the third is a corollary, and the other three concern three other questions.

8.8.1 What should be the cause in such a demonstration, and of what kind and in what way

The first part contains four sections. (1) The first raises the question of how in a demonstration *propter quid* there should be cause and effect rather than in a demonstration *quia,* by which we know only that something is thus and so [*quia ita est*], and what it is that we here call cause and what it is that we call effect. And the other three sections settle the question.

278. I have moved the title of the part from here to the end of the next paragraph.

(2) The second section, accordingly, eliminates a certain false way of responding, which states the negative conclusion that a demonstration is not said to be *propter quid* because the premises are the causes of the conclusion, for neither in a syllogism nor, consequently, in a demonstration are the premises the causes of the conclusion, given that the conclusion can be formed before the premises, and it can exist without them. And if a caviler were to say that although the proposition that will be the conclusion, or one that is similar to it, can be, and can be formed, without the premises, and thus in no genus of cause does it depend on the premises for its being or becoming, yet it is not a conclusion until it is inferred and proved from the premises, then I reply that the person who cavils in this way does not say why a demonstration is called *propter quid,* for exactly the same applies in the case of a *quia*-type demonstration. Furthermore, even if one were to say that the premises are the material causes of the conclusion, since the conclusion is composed of the major and minor extremities, I would again reply that in this respect there is no difference between a *quia* and a *propter quid* demonstration. Therefore, this is entirely irrelevant to the question. Indeed, it also appears that speaking in this way one could have no less reason to claim that the conclusion is the matter of the premises than conversely.

(3) The third section eliminates another false way of responding, stating the negative conclusion that for a *propter quid* demonstration it is not sufficient if the knowledge of the premises is the cause of the knowledge of the conclusion, for this is also the case with a demonstration *quia:* for every demonstration, on account of being a demonstration, produces the knowledge of its conclusion by means of the knowledge of its premises.

(4) The fourth section infers from the elimination of these two ways of responding the true way, for after the elimination of these two there does not seem to remain any other. But it will be useful to clarify this mode. This mode is disjunctive. As to the first member of the disjunction, it suffices if both in the conclusion and in one of the premises there is a causal term, which renders the proposition causal. And this appears to me to be clear from the meaning of the terms. For a *propter quid*–type demonstration concerning a lunar eclipse does not only make [me] know that the moon is eclipsed, for otherwise it would make [me] know only that this is so [*quia ita est*], and this perhaps I already knew even before the demonstration, because I have seen it eclipsed. Yet, the demonstration does not make me know more about the conclusion than what is actually concluded. Therefore, it not only concludes that the moon is eclipsed but something more, namely, the reason why [*propter quid*]. And it is for this reason that we should add a causal predicate with the sign of causality [*nota causalitatis*].

For example, if I argue that 'whenever there is a deficiency of light in the

half of the moon turned towards the sun, the moon is eclipsed; but whenever the earth is diametrically interposed between the sun and the moon, there is a deficiency of light in the half of the moon turned towards the sun; therefore, whenever the earth is diametrically interposed between the sun and the moon, the moon is eclipsed', then the argument proceeds from what is prior to what is posterior [*a priori ad posterius*]. But one would argue in the opposite direction, from what is posterior to what is prior [*a posteriori ad prius*], as follows: 'Whenever there is a deficiency of the light of the moon, etc., the earth is diametrically interposed, etc.; but whenever there is an eclipse, then there is a deficiency of the light of the moon; therefore, whenever there is an eclipse, the earth is diametrically interposed'. It is obvious, therefore, that in both arguments I conclude only that whenever something is thus and so, then something else is thus and so. Hence, by virtue of such syllogisms I know precisely that whenever this is the case, that is also the case. Therefore, I do not know that *this is because of that* [*hoc est propter illud*], rather than conversely, unless something else is added, be it stated expressly or implied.

But I conclude *propter quid,* and I know of the conclusion the reason why things are as it says [*propter quid ita est*], by arguing thus: 'Every deficiency of the light of the moon on its half turned toward the sun, whenever it occurs, comes about because of the earth interposed, but every lunar eclipse is a deficiency of the light of the moon on its half turned toward the sun; therefore, every lunar eclipse, whenever it occurs, comes about because of the earth interposed'. Here I not only conclude and know that a lunar eclipse occurs whenever the earth is interposed, but I also conclude and know that a lunar eclipse, whenever it occurs, occurs *because of* [*propter*] the earth interposed. It is clear, therefore, that this is obviously a causal proposition according to the description given earlier, namely, in the second part of chapter six of this treatise.[279] And the major is also a causal proposition, and if the major were not assumed as a causal proposition, then no causal conclusion would follow.

Likewise, if I say, 'Every building that protects us from the wind, heat, and storms is made from a foundation, walls, and roof; every house is such a building; therefore, every house [is made from a foundation, walls, and roof]', this demonstration is *propter quid* and concludes in the genus of material cause. And it is clear that the conclusion and the major are causal propositions, for the word 'from' indicates the material cause. But if I were to argue thus: 'Every building that defends, etc., is a foundation, walls and roof; every house is such a building; therefore, etc.', then neither the conclusion nor the premises would expressly say that *this* would be because of *that.* Therefore, strictly speaking

279. See 8.6.2.

[*de virtute sermonis*] we would not know by means of such an argument that *this* would be because of *that.*

The other member of the disjunction provides yet another mode, namely, that it is not necessary for the conclusion, nor for one of the premises, to be a causal proposition, but [merely] that the middle term should appropriately signify the cause of things' being in the way signified by the conclusion. For example, suppose we argue thus: 'Whenever the earth is diametrically interposed between the sun and the moon, the moon is eclipsed; but whenever in the opposition of the moon to the sun, the moon is either in the head or in the tail of Draco, the earth is diametrically interposed between the sun and the moon; therefore, whenever in the opposition of the moon to the sun, the moon is either in the head or in the tail of Draco, the moon is eclipsed'; this demonstration will be called *propter quid,* since the earth's being diametrically interposed between the sun and the moon, which is signified by the middle term of this argument, is the proper cause because of which [*propter quod*] the moon is eclipsed in its opposition to the sun, and while it is either in the head or the tail of Draco. Likewise, if one were to argue thus: 'Every extinction of fire[280] in the clouds is a sound in the clouds; every thunder is an extinction of fire in the clouds; therefore, every thunder is a sound in the clouds', this would be a demonstration *propter quid,* for the extinction of fire in the clouds, which is signified by the middle term of the argument, is the cause of thunder's being a sound in the clouds, as is signified by the conclusion.

And if you asked which member of this disjunction we should adhere to, it would immediately seem to me that Aristotle maintains the second member, because when providing an example he says that the following is *propter quid:* 'Any stars that are close do not twinkle; but the planets are stars[281] that are close; therefore, the planets do not twinkle', for the stars' being close is the reason why [*causa quare*] they do not twinkle. And this is why Aristotle says that by reversing the syllogism, the demonstration *propter quid* is turned into a demonstration *quia,* and conversely, by arguing thus: 'Any stars that do not twinkle are close, but the planets do not twinkle; therefore, they are close'.[282] And this way of putting the matter seems reasonable, for everybody commonly claims that a demonstration *propter quid* should proceed from the

280. The modern reader might prefer 'discharge of electricity' here instead of 'extinction of fire'. (But examples need not be verified.)

281. Obviously, Buridan uses 'star' *(stella)* in the extended sense of 'heavenly body', which he can do, given his own doctrine, according to which *nomina sunt ad placitum* (names are conventional).

282. Aristotle, *Posterior Analytics* I.13.78b8–9. 78a31–37.

causes to the effects. For in this way this process is manifest, if the middle term, which is placed in both premises, signifies the cause of what is signified by the conclusion. But in the other way one does not proceed from the cause to the effect, but perhaps from a cause to a cause, for just as a causal term is placed in the minor, so also it is placed in the conclusion.

Nevertheless, these things notwithstanding, it seems to me that the former mode formally concludes and makes one know that this is because of that [*hoc est propter illud*]. Therefore, formally and in the strictest sense, it makes one know conclusively the reason why [*propter quid*]. But the second mode does not, unless the sign of causality [*nota causalitatis*] is implied or expressed, for I may know that the planets are close and the fixed stars are far away, and that the planets do not twinkle and that the fixed stars do; and thus I would know the major, the minor, and the conclusion, and yet I would be in doubt as to whether the planets do not twinkle because they are close, or for some other reason [*propter aliam causam*]; indeed, many are in fact doubtful about this, although they know all the above points. And there is yet another example, namely, that just as for demonstrating a reduplicative proposition one has to add the reduplication of the major extremity predicated of the middle term in the major proposition, so that this major extremity can be concluded and formally known of the minor extremity, so also it is necessary for demonstrating and knowing the *propter quid* in the conclusion that one place in the major proposition next to the major extremity that *propter quid* which is in question, namely, a causal predicate with a sign of causality, thus enabling it to be inferred in the conclusion.

But then it is asked why Aristotle provided the second mode. One may reply that he provided it not because it formally and expressly concludes that this is because of that [*hoc esse propter illud*], and, consequently, it does not make one know the reason why [*propter quid*] in virtue of its proper meaning, but because by a slight modification or addition it would become expressly and formally *propter quid,* namely, by changing the premises from assertoric [*de inesse*] into causal ones, for instance, in the example with the planets: 'The stars that are close do not twinkle because they are close; the planets are stars that are close; therefore, the planets do not twinkle because they are close'. And if by such a modification or addition the premise and the conclusion cannot be reduced to causal ones, one should not say that the demonstration is *propter quid.*

But then it seems to me that one should say that we have most strictly and perfectly a demonstration *propter quid* when these two modes are combined in one demonstration at the same time. And it is for this reason that Aristotle and others provide that second mode, so that immediately after the aforementioned addition one may perfectly obtain the mode of *propter quid* in the strict-

est sense.[283] But the first mode, in which the middle term would not signify the cause, could not thus become the mode in the strictest sense, although it would still formally demonstrate the reason why.

8.8.2 Whether the definition of knowledge is a correct definition of knowledge propter quid

(1) Second, it is asked whether the definition of knowledge provided by Aristotle in bk. 1 of the *Posterior Analytics* is a correct definition of the knowledge produced by a demonstration *propter quid,* namely, "to know is to cognize the cause of the thing, and that it is its cause, and that the thing cannot be otherwise."[284] (2) And we should say that it is, if we expound 'the thing cannot be otherwise' as meaning that it is impossible for such an effect to be or come to be without such a cause, and that it is impossible for such a cause to be or come to be without there being or coming to be such an effect.

The second part first raises a certain question and then appends its solution. And this question immediately presupposes that the definition provided here is not supposed to apply to all kinds of knowledge, or to knowledge in general. For it does not apply to knowledge that we gain by means of a demonstration *quia,* which does not involve the cause, as is self-evident. Therefore, it seems that Aristotle intended to apply this definition only to knowledge *propter quid,* which we gain by means of a demonstration *propter quid.* Hence, the question asks whether, with respect to that kind of knowledge, this definition has been correctly given.

(2) The second section shows that it has, provided [the phrase] 'the thing cannot be otherwise' is correctly interpreted. And this can be obvious from what has been said in the previous part. For if the conclusion is demonstrated and is formally known *propter quid,* then it has to be a causal proposition. Therefore, insofar as it contains a causal term, its knowledge has to be the cognition of the cause of the thing. And I say 'the cause of the thing' [*causam rei*], i.e., the cause of the fact that things are in the way [*causam ita se habendi*] signified by the rest of the conclusion. But it is not enough to know this cause

283. Ibid., I.13; See, e.g., Thomas Aquinas, *Commentaria in Libros Posteriorum Analyticorum Aristotelis,* 1.lc.23.

284. Aristotle, *Posterior Analytics* I.2.71b9–11.

and to know that things are in this way [*quod ita est*], but it is also necessary to know that things are in this way because of this cause, and this would not be known unless one were to know that this cause is the cause of things being in this way. And this is why 'and that it is its cause' has to be added. For example, if I formally know *propter quid* that there is a lunar eclipse, I do not only know that the earth is interposed and that there is a lunar eclipse, but I also know that there is a lunar eclipse because of that interposition, and to know this is to know that that interposition is the cause of the eclipse.

But, furthermore, it was said in the last part of the preceding chapter that Aristotle here takes 'knowing *propter quid*' and 'demonstration *propter quid*' very strictly, as restricted to demonstrating and knowing by means of the proper cause, indeed, to only enduring knowledge and demonstration, because it was said earlier that knowledge in the strict sense is enduring knowledge. Therefore, since enduring knowledge is not of contingent things, it is indeed necessary to append that 'the thing cannot be otherwise'. But in order to designate the appropriateness of the cause to the effect required for a *propter quid* demonstration in the strictest sense, we should expound 'the thing cannot be otherwise' in the manner laid down in this second section.

For example, if I know that every nutrition occurs on account of the soul [*propter animam*], I say that I thus somehow know what the cause of nutrition is [*propter quid nutritio est*], but not what it is appropriately. But if I know that every nutrition occurs because of the soul converting nutriment into the substance of the living body of which it is the act, I know appropriately what the cause of nutrition is, and that it is impossible to have nutrition without a soul of this kind, and that it is impossible to have such a soul without having nutrition from it. And so it seems to me that the clause 'and that the thing cannot be otherwise' is placed in this description to designate the enduring character of *propter quid* knowledge and to designate appropriateness.

8.8.3 Some corollaries

(1) And from this definition of knowledge it follows that there is no demonstration that makes one perfectly know *propter quid,* even if the middle term signifies the cause of the thing signified by the conclusion, unless one premise and the conclusion are causal propositions, either expressly or by the intellect's supplementing this [causal connection]. (2) And it also follows that, although the same thing has several causes in the several genera of causes, the same conclusion does not have several *propter*

quid demonstrations, in which the causal propositions do not express the same cause or causes; (3) however, there would indeed be the same conclusions of these several demonstrations, excluding their causal terms.

The third part infers three corollaries in three sections. (1) The first is clear from what has been said concerning the previous part and from the fact that the definition of knowledge includes 'and that it is its cause'. For this is not expressed in a demonstration in the conclusion unless the conclusion is causal. And a causal conclusion follows formally only if one premise is also causal, just as a reduplication is not entailed unless it is first placed in a premise.

(2) The second corollary follows from the first, for although the same thing has several causes, there have to be diverse causal predicates signifying appropriately these causes, and these diverse causal predicates are placed in the conclusions, as has been said. Therefore, their diversity has to yield diverse conclusions.

(3) The third corollary is also clear, for just as a causal term should signify a cause, so the rest of the conclusion should signify the effect. And when it is posited that the effect should be the same, for it was posited that there are diverse causes of the same thing, then, removing the causal terms, the remainder of the conclusions should be the same. For example, let us posit that the efficient cause of sleeping is evaporation from the digestion of food rising to the head, blocking and obstructing the sensory channels, and its final cause is the restoration of the senses or the sensory spirits.

Then let us argue as follows: 'Every natural repose of the senses occurs because of [*propter*] the evaporation, etc., and every sleep is a natural repose of the senses; therefore, every sleep occurs because of the evaporation, etc.'; here I know the efficient cause on account of which [*propter quid*] sleep occurs. But if I argue thus: 'Every natural repose of the senses occurs for the sake of [*propter*] the restoration, etc.; every sleep is the natural repose of the senses; therefore, every sleep occurs for the sake of the restoration, etc.', here I know the final cause for the sake of which [*propter quid*] sleep occurs. And it is obvious how the conclusions are diverse, and that, if their causal terms, namely, 'because of evaporation, etc.' and 'for the sake of the restoration, etc.' are removed, the remainder will be the same in both cases, for what will remain is only 'sleep occurs'.

And it is also clear from the same examples that there may well be the same middle term in diverse demonstrations, which demonstrate diverse conclusions *propter quid* according to diverse genera of causes, if we call demonstrations *propter quid* for the sole reason that they infer causal conclusions. But if they are so called for the sole reason that the middle terms appropriately signify the cause of things' being in the way signified by the conclusion, then,

if they use diverse genera of causes of the same thing, then it is obvious that they may well have the same conclusion, but their middle terms have to be diverse.

8.8.4 Another definition of propter quid *demonstration*

(1) Furthermore, it is asked whether the definition of *propter quid* demonstration given by Aristotle—that a demonstration is from premises that are true, first, immediate, better known, prior, and the causes of the conclusion—is correct.[285] (2) And we should say that it is, according to the correct exposition, for as Aristotle says, in this way they will be the proper principles of that which is demonstrated.[286]

The fourth part raises again a problem and then goes on to solve it. The first section, in which the question is raised, is clear in itself, or will be after the elucidation of the second, which does indeed need some explanation. And it seems that Aristotle intends to speak here about *propter quid* demonstration in the strict sense, namely, about that by means of the proper cause: it is for this reason that Aristotle says that "in this way they will be the proper principles of that which is demonstrated." And we do not deal at this point with indirect [*ad impossibile*] demonstration, for that will be discussed later, but only with ostensive *propter quid* demonstration.

And it is also clear that this is not a quidditative definition, nor is it only a nominal one. Rather, it is a causal definition in the genus of material cause; for the conclusion and the premises are only the matter of the syllogism, and, consequently, of the demonstration, for every demonstration is a syllogism. And we should add that a demonstration is a syllogism from true first [premises]. And so it is clear that if this is the definition of demonstration, then it is by means of the material cause.

But since a definition should be proper to, and convertible with, the definitum, if the principal term that signifies the cause in the causal definition is not proper to the definitum, then it has to be appropriated by the addition of differences. But the term 'premises', which signifies the matter of demonstration, is not proper to the term 'demonstration', for there are also other syllogisms

285. Ibid., I.2.71b20–22.

286. Ibid., I.2.71b22–23.

[that proceed] from premises. Therefore, it is for the sake of appropriation that the differences 'true, first, etc.' are added.

For the premises of a demonstration should be true, since it is a distinctive feature [*proprietas*] of demonstration that it produces the knowledge of the conclusion by means of the knowledge of its premises; therefore, the premises of the demonstration have to be known, and it is not possible to know a false proposition; therefore, the premises have to be true. And this is laid down so as to exclude many syllogisms that conclude to a conclusion, whether true or false, from false premises.

The next addition is 'first'. A proposition is said to be first either because it does not have a prior proposition by which it could be demonstrated, and this is how we said that the indemonstrable principles of demonstration are called first, or it is said to be first by the appropriation and convertibility of terms, as was said at the end of the sixth chapter of this treatise.[287] And this is how 'first' is taken here, so as to exclude a demonstration that would proceed by means of a common and remote cause, for such a demonstration we would call *quia* and not *propter quid.* And so, it is on account of this difference that Aristotle said: "In this way they will be the proper principles of that which is demonstrated."[288]

The next addition is 'immediate', i.e., 'indemonstrable', so that they should be immediate on account of the absence of a middle term by which they could be demonstrated. But then we should add: 'or from ones that derive their cognition from immediate principles', as was said in the second part of the fourth chapter of this treatise.[289] For if we did not add this disjunction, there would be very few *propter quid* demonstrations. Likewise, in geometry we would have very few, namely, only those that do not hold by virtue of conclusions previously demonstrated.

The next addition is 'prior and better known', for it does not suffice if the premises are first, i.e., [formulated] in convertible and immediate, or indemonstrable, terms, but they also have to have the relation of being prior and better known with respect to the conclusion to be demonstrated by them. They have to be prior, i.e., known prior [to the conclusion], for every intellectual teaching and learning derives from some preexisting cognition, and they also have to be better known, i.e., known to a greater degree and more clearly than the conclusion, for otherwise there would be question-begging [*petitio principii*].

But these points still do not suffice, for something could be a demonstra-

287. See 8.6.4.

288. Aristotle, *Posterior Analytics* I.2.71b22–23.

289. See 8.4.2.

tion *quia* by a noncause, from proper and indemonstrable principles, which are prior to and better known than the conclusion, i.e., known earlier and to a greater degree, and yet not be a demonstration *propter quid.* Therefore, it is to exclude this case that we have the addition 'and the causes of the conclusion', that is to say, the demonstration has to consist of terms that signify the cause or causes of the conclusion, i.e., [of the fact] that things are in the way signified by the conclusion, or, excluding the causal term placed in the conclusion, in the way signified by the remainder of the conclusion, so that this is expounded in diverse ways according to the diverse ways in which we wish to talk about the two modes stated disjunctively in the first part of this chapter.

It would appear, therefore, that here we should have a correct material definition of a *propter quid* demonstration as thus expounded, for it is proper and convertible, given that every such demonstration is a syllogism from such premises and conversely. But I have doubts concerning this convertibility, for a *propter quid* demonstration in the strictest sense requires endurance, so that it should not concern contingent [things]. Therefore, one would have to add the clause placed in the definition of knowledge, namely, 'from ones that cannot be otherwise'. And one should also indicate 'and that it is its cause', so that one would add 'from the causes of the conclusion that are known to be its causes'.[290] And then this definition would indeed be convertible with 'demonstration in the strictest sense'.

But if this were not added, then I would say that Aristotle stated this proposition not as one [predicating] the definition of the definitum but as [one] predicating several properties applying to every demonstration in the strictest sense, although others are also required. And all these properties are made manifest in connection with demonstration in terms of its definition given earlier, namely, that a demonstration in the strictest sense is a syllogism producing knowledge in the strictest sense, according to the definition of knowledge given earlier. For every syllogism producing this kind of knowledge is from premises that are first, etc., and every demonstration in the strictest sense is a syllogism producing this kind of knowledge.

290. See Aristotle, *Posterior Analytics* I.2.71b22.

8.8.5 Whether one can demonstrate the effect propter quid *by all genera of causes*

(1) It is also asked whether one can demonstrate the effect *propter quid* by all genera of causes. (2) And it seems that one cannot, because a material cause is not a proper cause of any of its effects, for its nature is to be in potency to something else. (3) But Aristotle seems to state the opposite in bk. 2 of the *Physics,* where, after he discusses the four genera of causes, he says: "What [sorts of] causes there are and that they are as many as we have said is clear. For there are as many in number as are comprised by *propter quid.* For the *propter quid* is reduced ultimately either to quiddity [*quod quid est*] in the case of immobile things, as in mathematics (for the definition of 'straight' or 'commensurate' or of something else is ultimately reduced [to the quiddity]); or to the first mover, as in 'For what reason [*propter quid*] did they quarrel?—Because they were angry'; or 'For the sake of what?—For dominance'; or to those items that come to be in matter."[291] (4) These are Aristotle's words, and this position is to be maintained.

The fifth part deals with another question. It is divided into four sections. The first of these raises the question, and is clear. The second argues for the negative side on the grounds that a *propter quid* demonstration has to be based on the proper cause, as has been said, and matter is not a proper cause; therefore, [a *propter quid* demonstration cannot be based on matter]. The third argues for the affirmative side on the basis of the authority of Aristotle. The fourth asserts that this affirmative side is to be held, namely, that an effect can be demonstrated *propter quid* in all genera of causes. And we should see how this comes about.

I reply, therefore, that when we say that a *propter quid* demonstration has to be based on the proper cause, we do not understand this by taking the terms 'cause' and 'effect' significatively and in personal supposition, for in this way a cause and effect do not enter a demonstration; rather, we take these terms in material supposition, so that the term that signifies the cause and the term that signifies the effect placed in the demonstration are mutually proper and convertible. Therefore, although no matter is the proper cause of an element so that it would not and could not be and come to be the cause of another element, for it is in potency to the other, nevertheless, we can signify matter and its effects in such a manner and in such a context that the term signifying matter in this context is convertible with the term signifying the effect in this

291. See Aristotle, *Physics* II.3.194b16–17, 195b28–30.

context. And then we can demonstrate the effect brought about by the cause *propter quid* from the proper items, namely, from those terms.[292]

For example, let one term be 'having matter', let the other be 'heavy or light', and the third 'generable and corruptible'; these terms are [mutually] proper and convertible with each other. And so we can argue as follows: 'Everything having matter is corruptible, and everything heavy or light has matter; therefore, everything heavy or light is corruptible'. And if we want the demonstration to conclude expressly and formally with the reason why [*propter quid*], we should add in the major proposition and in the conclusion a causal term, saying the following: 'Everything having matter is corruptible because of its matter existing in potency to something else; everything heavy or light is [something] having matter; therefore, everything heavy or light is corruptible because of its matter existing in potency to something else'.

And we could handle the other causes in a similar manner. For example, in the case of the efficient cause: 'Every contrary is corruptible by its contrary; everything heavy or light has a contrary; therefore, everything heavy or light is corruptible by its contrary'. Again, in the case of the formal cause: 'Everything existing by a form that requires a certain complexion of the primary tactile qualities is corruptible because of the form requiring such a complexion; everything heavy or light exists by a form requiring etc.; therefore, everything heavy or light is corruptible because of the form requiring such a complexion'. Likewise, the final cause is exemplified in this way: 'Everything that has matter having a natural tendency to receive another form [*habens materiam appetentem aliam formam*] is corruptible for the sake of [*propter*] the generation of another form or substance; everything heavy or light has matter having [such] a natural tendency; therefore, everything heavy or light is corruptible for the sake of the generation of another etc.'.

8.8.6 On mathematical demonstrations

(1) And in connection with what has been cited from Aristotle concerning mathematics, it is asked whether mathematical demonstrations should be said to be mostly *propter quid* and to proceed by the formal cause, as is usually claimed. (2) And it seems that one should say that if this is to be held, then one should take less strictly [the phrase] '*propter quid* demonstration' and also take less strictly [the phrase] 'formal cause'.

292. On account of their convertibility, those terms will be the *propria* of each other.

In the sixth part two further questions are raised, and their solutions are immediately indicated. The first question is whether mathematical demonstrations are mostly *propter quid* demonstrations. And it is obvious that Aristotle and others commonly say so. It seems to me, however, that strictly speaking this is not so, for, although in mathematics the knowledge of the premises is indeed the cause of the knowledge of the conclusion, nevertheless, it has been said that this is not sufficient, for this does not make a distinction between a demonstration *quia* and *propter quid.* Rather, it is necessary that the things signified by the terms and the propositions be related as cause and effect, and that *this* [thing] truly exist because of *that* [thing]; but this is not the case in mathematics.

For example, in connection with the first conclusion in geometry—namely, that on a given line an equilateral triangle can be constructed—it is assumed that there are or come to be two circles, the radius of both of which is the given line, and its ends are the centers of these two circles, from which two other lines are extended to the point of intersection [of the circles], constituting the triangle with the given line. And then it is demonstrated that this triangle is equilateral, i.e., that either of its constructed sides is equal to the given line, on the basis of the fact that all lines drawn from the center of a circle to its circumference are equal; but these are such lines; therefore, etc.

Now it is clear that those lines' being drawn from the center of the circle to its circumference is not the cause of their being equal, for, assuming that only this triangle had been drawn, and those circles had never come to be, nevertheless, those lines would still be equal to each other; or indeed, if, preserving that triangle, the whole external surface were annihilated by divine power, then there would no longer be circles there, nor their circumferences, yet those lines would be no less equal to each other; or if those lines, neither shortened nor extended, were separated, and one line were in Paris, another in Rome, and the third in London, they would no longer be drawn from the center to the circumference, yet they would still be as equal as before. Therefore, these lines, or their being equal, in no genus of causes depends on those circles or their circumferences, or their being drawn from the center to the circumference; nor is the former because of the latter, for the one would [in those cases] exist without the other.

Likewise, if I demonstrate that every triangle has three internal angles equal to two right angles on the basis of the fact that one external angle is equal to the two internal angles opposite to it, then there is no causality here on the part of the things, for the external angle has no causality affecting this triangle, or its internal angles, or their equality to two right angles, for these could all exist after destroying that external triangle and annihilating all magnitude external to that triangle.

But it is true that the knowledge of the premises is truly the cause of the knowledge of the conclusion, because it is by the knowledge of the premises and the obvious necessity of the consequence that the intellect is determined to the knowledge of the conclusion, and without knowing them, or their equivalents, we would not know the conclusion. But since this does not suffice for demonstrating and knowing *propter quid,* why are we wont to say that such demonstrations are *propter quid?*

And I reply that we are wont to say this for several concurrent reasons. The first is the likeness arising from the fact that these demonstrations proceed from first and *secundum quod ipsum* premises, just as demonstrations that are more powerful and the most powerful proceed on the basis of the proper causes and are strictly called *propter quid.* But this does not suffice, for, as has been said, in a *quia*-type demonstration one proceeds from the proper effect to the proper cause.

The second is another similarity or agreement, namely, that just as in the sciences in which on the part of the things signified there is a difference between proceeding from the cause to the effect and conversely—with the more powerful and the most powerful demonstrations being those that proceed from the proper causes to the effects, and these being properly called *propter quid*—so also in mathematics, where there is no difference between terms that signify causes and [those that signify] effects, the most powerful demonstrations are called *propter quid,* and are those that hold on the basis of the known definitions of terms, which are presupposed in these sciences.

And yet a third reason can be given, for in every demonstration there has to be a priority and causality of the premises with respect to the conclusion in the order of knowledge, such that the premises should be earlier and better known and that the knowledge of the premises should be the cause of the knowledge of the conclusion. But in sciences in which, along with this priority and causality, the difference and the priority of the cause with respect to the effect on the part of the things signified are also considered, the demonstrations are not called *propter quid* unless they proceed in both these respects, from items that are prior and are causes to those that are posterior and are effects.[293] But in cases in mathematics in which no such difference or priority of the cause with respect to the effect on the part of the things signified is observed, the demonstrations are usually called *propter quid* only on account of the priority and causality that the premises have with respect to the conclu-

293. That is, in the case of a strictly *propter quid* demonstration, not only the knowledge of the premises has to be prior to and the cause of the knowledge of the conclusion, but also the things signified by the premises have to be prior to and the causes of the things signified by the conclusion.

sion in the order of knowledge. Therefore, if we want to speak properly, we should not say that a triangle has three angles equal to two right angles because of the fact that its external angle is equal to the two internal angles opposite to it, but we should say that we know that a triangle has three angles, etc., because we know that its external angle is equal to, etc. And the same goes for the other mathematical demonstrations. This, therefore, should be said about the first question.[294]

The second question raised in this part is whether mathematical demonstrations proceed by means of the formal cause. And it is certain that the mathematician does not at all consider the mover and the agent under the concept according to which they are called mover or agent, nor does he consider matter in terms of the concept according to which it is said to be the matter of this substantial or accidental form, or subjected to some form, whether substantial or accidental, or to some motion or change. Nor does he consider the end in terms of the concept of goodness or badness, nor in terms of the concept according to which we say that something is or comes to be for its sake, nor even the form under the concept according to which that is said to be strictly a form which informs the subject and inheres or does not inhere in it. For he does not consider whether magnitude inheres in substance or exists by itself, or whether it is [identical with] substance or distinct from substance. Nor does he consider whether shape is inherent in magnitude or is the same as magnitude itself. And he in no way considers beings as to whether one is the cause of the other. Indeed, even asking whether in its demonstrations the knowledge of the premises is the cause of the knowledge of the conclusion is not a mathematical question.

It is true, however, that he does consider efficient, material, formal, and final causes, and their effects, and the things that are good or bad, but this he does in terms of the concepts according to which they are said to be magnitudes and numbers, as is clearly taught by Aristotle in bk. 12 of the *Metaphysics,* where he says that they lie who say that mathematical sciences do not consider the aforementioned things at all.[295] And so, talking about formal causes in the strict sense, the mathematician no more considers formal causes than

294. For a clear presentation and defense of the opposite explanation, namely, the one according to which in mathematics we have genuine *propter quid* demonstrations because we demonstrate by proceeding from causes to effects on the part of the things signified in all genera of causes, see Josephus Blancanus, *De Mathematicarum Natura Dissertatio* ("A Treatise on the Nature of Mathematics," trans. G. Klima), in P. Mancosu, *Philosophy of Mathematics and Mathematical Practice in the Seventeenth Century* (Oxford: Oxford University Press, 1966), pp. 178–212.

295. Aristotle, *Metaphysics* XII.3.1078a33–34.

any others, and no more demonstrates by means of them than he does by means of the other causes.

But because of the opinion of Plato, who stated that quidditative predicates primarily signify separate forms, which he said to be the quiddities of singular substances, the name 'form' has been transferred to signify quidditative predicates. For it is in this way that Aristotle says in bk. 2 of the *Physics* and bk. 4 of the *Metaphysics* that the parts of the definition, which are the genus and the difference, are forms.[296] And this transumption has been further expanded to signify all terms of definitions, whatever they are, unless the terms of the definition and the term defined obviously signify the causes and the effects in different manners. And since all mathematical definitions are of this kind, we say that they are all in terms of the form or forms. And since a form in the strict sense is a cause, we are wont to say, in an even more remote sense [*adhuc remotiori intentione*], that all mathematical definitions are given in terms of formal causes. And so in the final analysis, since the mathematician demonstrates by means of those definitions, and reduces [everything] to them, we say that he demonstrates in terms of formal causes.

Indeed, in this way not only in mathematics, but in many other sciences in which attributes are demonstrated of their subjects by means of their definitions, if the terms do not signify the causes and the effects differently, Aristotle usually calls all such demonstrations 'those in terms of formal causes' and all quidditative definitions 'formal definitions'.

8.9 On demonstrations *quia*

(1) In the discussion of demonstrations *quia* we state that Aristotle posited two modes of these. The first occurs if the demonstration demonstrates the effect by means of the cause, but not by means of the first and immediate cause, i.e., not by means of premises that are 'with respect to what the thing is' [*secundum quod ipsum*] and indemonstrable. (2) The second mode occurs if there is a demonstration but it does not demonstrate the effect by means of the cause, whether the premises are *secundum quod ipsum* and indemonstrable or not. (3) And in accordance with what was said earlier, one may add a third mode, namely, if the demonstration demonstrates the effect by means of the cause, i.e., by means of *secundum*

296. See Aristotle, *Physics* II.3.194b26–29; *Metaphysics* VII.11.1036a27–29.

quod ipsum and indemonstrable premises, but it is not known that this is its cause.[297]

Just as in the preceding chapter we discussed *propter quid* demonstrations, so in this chapter we should discuss demonstrations *quia.* And since Aristotle seems to state that a *quia* demonstration and a *propter quid* demonstration with the same terms proceed in a circle, we should see how a circle in demonstrations is possible or impossible.

The ninth chapter has five principal parts. The first [8.9.1] distinguishes diverse modes of the demonstration *quia.* The second [8.9.2] shows how it pertains to the same science or to diverse sciences when one knows with respect to the same thing how it is [*quia est*] and the reason why it is [*propter quid est*]. The third [8.9.3] shows how one should consider a circle between a *quia est* and a *propter quid est* demonstration. The fourth [8.9.4] shows how one should consider it among several *propter quid* demonstrations. And the fifth [8.9.5] shows in a similar manner how it is possible to have it among several *quia est* demonstrations.

8.9.1 On the various modes of demonstrations quia

The first part contains three sections corresponding to the three modes of *quia* demonstrations. (1) And the first mode, as stated in the first section, is clear enough, given the exposition appended to it and given what was determined earlier. If, however, this mode had a conclusion in the style of a causal demonstration in the strict sense, then the reason why [*propter quid*] would in a way be demonstrated here, for it would be concluded and known that the thing is thus and so, and that it is thus and so because of this [*propter hoc*]. Nevertheless, such a demonstration is not called *propter quid* in the strictest sense of 'demonstration *propter quid*', as was said above. Therefore, it is counted among the demonstrations *quia est.*

And this mode can be divided into three [submodes]. The first is exemplified if [the demonstration] is from immediate, i.e., indemonstrable, propositions, but primacy [*primaevitas*] and convertibility are lacking. Another is exemplified if the converse is the case. The third is exemplified if both [of the

297. I have moved the section title from here to where I think it properly belongs. Also, I do not follow the current numbering of de Rijk's text here, because it appears to be mistaken. Rather, I follow Buridan's own division, as indicated by him below.

previous conditions are met]. Or perhaps one might say that a demonstration is never *quia* if it falls short of a *propter quid* demonstration because of a failure of immediacy, i.e., indemonstrability, while other requirements of a *propter quid* demonstration are satisfied. For if a premise is demonstrable, then either it has already been demonstrated, and then nothing prevents the demonstration from being *propter quid,* as was said earlier in the fourth part of the previous chapter, or it has not been demonstrated, and then it is not known; therefore, it does not produce the knowledge of the conclusion, and consequently no demonstration is produced by it, whether *quia* or *propter quid.* And this is the position I hold.

(2) The second mode is also clear enough [as stated] in the second section, which also indicates its division, for it is possible for this mode to have premises *secundum quod ipsum,* i.e., convertible premises, and it is also possible for it to have nonconvertible premises. But one can also provide another division, for it is possible that the demonstration is from what is posterior [*a posteriori*] on the part of the things signified, i.e., [that it proceeds] from the effect to the cause, as when we demonstrate a planet to be close by its not twinkling. And it is possible that the terms or propositions do not differ in presenting the cause or the effect, as was said earlier concerning mathematical demonstrations, where it was also said how and why those mathematical demonstrations are usually called *propter quid.*

(3) And finally, the third mode given in the third section has been sufficiently clarified in the whole preceding chapter.

8.9.2 In what way knowledge propter quid *and* quia *concerning the same thing pertains to the same science or to different sciences*

(1) But sometimes the same science demonstrates about the same thing how it is [*quia est*] and for what reason it is [in the way it is] [*propter quid est*], namely, if it considers the difference and primacy [*primaevitas*] of causes and effects on the part of the things signified, and it does not presuppose its principles from another science. (2) But sometimes to know how the thing is belongs to one science and to know for what reason it is [in the way it is] to another. And this happens if one science in this regard is somehow subordinated to another. For then it often happens that

the subordinate knows how the thing is and the superior demonstrates for what reason it is [in the way it is] .

The second part shows how it pertains to the same science or to diverse sciences to consider *quia est* and *propter quid est.* And Aristotle says very little about this issue in bk. 1 of the *Posterior Analytics.* For he says: "But there is a difference between knowing the *quia* and the *propter quid,* first in the same science, etc."[298] Later on he says: "In the other way the *propter quid* differs from the *quia* when different sciences consider both. Such are those which are so related that the one comes under the other."[299] And then he adds: "And some of these sciences bear almost the same name [*sunt fere univocae*], etc."[300] But later on he says that there are many of these sciences—namely, one of which knows the *quia* and the other the *propter quid*—that are not so related, i.e., that bear almost the same name, for example, medicine and geometry, because to know the *quia* [i.e., the fact] that circular wounds heal more slowly belongs to the doctor, but to know the *propter quid* [i.e., the reason] of this fact belongs to the geometer. But these words of Aristotle are not entirely clear.[301]

This part, therefore, has two sections. The first concerns *quia est* and *propter quid* est in the same science, and the second in diverse sciences.

(1) As to the first we should note that in natural sciences the effects are often obvious to the senses with respect to the fact that they are or how they are [*quia est*], and yet we do not know and are very much in doubt about the reason why they are or why they are in the way they are [*propter quid sunt*], since we do not know their causes. For example, by the senses we see that the moon is eclipsed in its opposition to the sun, but we do not know the reason why it is eclipsed. Considering therefore that the light cannot be deficient on the half of the moon turned toward the sun, except because of some opaque medium interposed, and that no other opaque medium can naturally intervene but the earth, we know the major proposition that every deficiency of the light of the moon on its half turned toward the sun is because of the interposition of the earth; and by adding the minor that every lunar eclipse is the deficiency, etc., we conclude and know the *propter quid* conclusion that every lunar eclipse is [i.e., occurs] because of the interposition, etc. Therefore, where

298. Aristotle, *Posterior Analytics* I.13.78a22–23.

299. Ibid., I.13.78b34–37.

300. Ibid., I.13.78b39–79a1; e.g., geometry and geometrical optics are related in this way, namely, they bear almost the same name (or are "almost univocal"), and the latter is subordinated to the former. See Buridan's distinction of the three modes of subordination below.

301. Nevertheless, Aquinas gives a pretty straightforward exposition of this passage. See Thomas Aquinas, *Commentaria in Libros Posteriorum Analyticorum Aristotelis,* 1.lc.25.

the lunar eclipse is concerned, we know within natural science *quia est,* and also *propter quid est,* namely, because of the interposition of the earth.

But we know these in different manners. For we know that the eclipse is [i.e., occurs] as a certain indemonstrable principle, which has the origin of its evidentness in the senses, but we know that it occurs because of the interposition of the earth thanks to a *propter quid* demonstration whose premises need not be resolved into the principles of another science. But it is possible to know both, namely, that the thing is and the reason why it is, about the same thing in the same science, as when Aristotle took himself to prove in bk. 8 of the *Physics* by means of the eternity of time that the first motion is eternal, and further that that first motion is eternal because of the immutability of the Prime Mover and the eternity of the first movable.[302]

(2) Concerning the second section it is also obvious that the natural scientist knows by his senses that the rainbow is an arch or part of a circle, and from geometrical optics [*perspectiva*] it is known why this is so [*propter quid ita est*]. For the demonstrations to this effect in bk. 3 of the *Meteorology* are the first demonstrables in optics.[303] Likewise, we know demonstratively by astronomy, as is clear from the treatise *On the Sphere,*[304] that the earth is spherical, and we also know by natural science the reason why it is spherical, namely, because all of the similarly heavy parts naturally tend toward the center of the world, if they are outside of it, and are naturally at rest once they are there. For this is how Aristotle intends to prove in bk. 2 of *On the Heavens* that the water in the sea is naturally under the air.[305] And this is how Aristotle provides the example that it is the doctor's task to know by experience [the fact] that [*quia*] circular wounds heal more slowly, but it is the task of the geometer to know why this is the case [*propter quid hoc sit*]. For this is the case because for the healing of a wound its edges need to be connected and unified, but the edges of circular wounds are more slowly reunited because [*propter hoc*] they are farther apart on all sides. And to know this belongs to the geometer, insofar as of all figures it is the circular ones whose edges are farthest apart on all sides.

A Doubt

But in connection with this point there arises a question concerning what had been stated in the second section, namely, that this happens when one

302. Aristotle, *Physics* VIII.1.251a8–252a5.

303. Aristotle, *Meteorology* III.2.371b26–372b10.

304. Thorndike, *Sphere of Sacrobosco,* pp. 81–83.

305. See Aristotle, *On the Heavens* II.4.287a30–b14.

science is somehow subordinated to another. For this is taken from Aristotle, who says: "Such are all those that are so related that one is under the other."[306] But how do geometry and medicine consider the same thing, one with respect to how it is [*quia*] and the other with respect to why it is so [*propter quid*], when neither is subordinated to the other? And the same goes for geometrical optics [*perspectiva*] and natural science.

This problem is solved by distinguishing [three modes of] subordination. For one [type of] subordination may be called univocal [*univoca*], the other almost univocal [*fere univoca*], and the third more remote and less properly so-called [*remotior et minus proprie dicta*] subordination. For the univocal occurs in the way in which a species is placed under a genus; and thus the science of magnitude according to the common concept of magnitude would be related in this way to the sciences of lines and surfaces and all bodies according to their specific concepts; and these sciences are already called parts of one total science, which is called geometry. And thus also the science of quantity according to its common concept subordinates to itself arithmetic and geometry, which are about number and magnitude according to their specific concepts. And those three sciences are already said to be parts of one entire science, which is called mathematics.

The second kind of subordination is said to be almost univocal, and it occurs in the way in which a part-in-mode is placed by means of an accidental determination under a whole-in-mode, as for example, immobile magnitude is placed under magnitude. For even if every magnitude is mobile, one could, nevertheless, imagine that there is some immobile magnitude, and I can entirely abstract or detach the concept of magnitude from the concept of mobility. It is in this way also that visible magnitude comes under magnitude and sonorous number comes under number. Therefore, it is in this way that geometry subordinates to itself astronomy and geometrical optics [*perspectiva*] and that arithmetic subordinates to itself music.[307] And, further, it is also in this way general geometrical optics [*perspectiva communis*] subordinates to itself the geometrical optics of the rainbow and the halo, and common astronomy does this with mobile astronomy.

But in this kind of subordination I do not take it to be absurd that the same science should be subordinated to diverse sciences. For a white man is a man and is white; therefore, a science about the white man is subordinated to the science of whiteness as such, as well as to the science of man as such, and would presuppose both in its reasoning and demonstrations.[308]

306. Aristotle, *Posterior Analytics* I.13.78b36–37.

307. See 8.9.2 n. 309.

308. In case it is not obvious, 'white man' has nothing to do with race in Buridan's ex-

Thus, therefore, astronomy, which considers mobile magnitude as subordinated to geometry on account of magnitude and to natural philosophy on account of mobility. And the same goes for optics, in its treatment of visual magnitude. And so also music, considering sonorous number or sound as numbered, is subordinated both to arithmetic, on account of number, and to physics, on account of sound.[309]

And for this reason many people doubted whether these sciences should be said to be mathematical rather than natural, or natural rather than mathematical. And the truth seems to me to be that they should neither be said to be mathematical absolutely speaking, nor natural absolutely speaking, but to be in between the two by participating in both, for they have several conclusions, namely, they have some conclusions the evidentness of whose principles derives from mathematical principles or conclusions, and they have others the evidentness of whose principles derives from natural principles or conclusions. With respect to the former conclusions, therefore, they are better called mathematical, whereas with respect to the latter they are better called natural. Consequently, insofar as they have more conclusions of this or that, they are better called this or that.

The third [type of] subordination can be described as that which is not based on the primary subjects of entire sciences but on some of their partial conclusions. Therefore, we do not say that any of those entire sciences is subordinated to another, as medicine is not in its entirety, nor in its great part, subordinated to geometry, but it is so with respect to some of its mixed conclusions, such as the conclusion that circular wounds heal more slowly than elongated ones. And so it would not be unacceptable to say that such conclusions should belong to an intermediate science [*scientia media*], neither to medicine absolutely nor to geometry absolutely. For there are many intermediate conclusions and demonstrations between mathematics and medicine, and even between mathematics and natural science or moral [philosophy], such as the conclusions stated concerning commutative and distributive justice in bk. 5 of the *Ethics*.[310] But there are no books dealing separately with those intermediate sciences, because of the paucity or nonprincipality of those conclusions.

But it still seems to me that it is not true absolutely speaking that it pertains

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ample. It is just the Aristotelian paradigm case of a thing that is one *per accidens,* namely, a thing considered under a complex concept that involves both an essential and an accidental concept.

309. The subordination of music to arithmetic is based on the Pythagorean tradition that represented musical harmonies in terms of numerical ratios (corresponding to the ratios of the lengths of the strings that produced the various pitches required for those harmonies).

310. Aristotle, *Nicomachean Ethics* V, 3–4, 1131a10–1132b20.

to geometry to know the reason why [*propter quid*] circular wounds heal more slowly, for it does not consider at all the terms 'wound' or 'heal'; and no superior science draws conclusions restricted to the subordinated science, for it has nothing to do with the restricting terms. And the doctor does not know this conclusion *propter quid* to the exclusion of geometry, nor would any other subordinated science know some conclusion *propter quid* to the exclusion of the superior science, if this conclusion derived its evidentness from the principles or conclusions of the superior science. For it would then not know the relevant premise. Therefore, the one who knows the conclusion *propter quid* in this case has to have the superior science insofar as he assumes and knows this premise; and, further, he also has to have the subordinated science, insofar as he assumes and knows the things that pertain to the additional restrictions, which belong to the subordinated science.

But then you will ask: "Who knows, then, the reason why circular wounds heal more slowly?" And I reply that it is the interdisciplinary professional [*medius artifex*], who knows the external sciences [*scientias extrinsecas*]. For he knows by geometry that the edges of a circular figure are maximally distant on all sides, and he knows by medicine that for the healing of a wound its edges should come together, and the intermediate science, assuming this, provides the rest, applying the one to the other. But we say that geometry knows the reason why circular wounds, etc., and in general that the superior science knows the *propter quid* of the conclusion of the subordinated science, insofar as the causal premise in the demonstration of that conclusion has its evidentness by virtue of the principles or conclusions of the superior science.

Therefore, let these things be declared about the subordination of sciences.

8.9.3 On the circularity between propter quid *and* quia

(1) Using the same terms there ensue two demonstrations in a circular manner: one is *quia,* proceeding from the effect to the cause, and the other is *propter quid,* proceeding conversely, from the cause to the effect. And Aristotle provides the example[311] that by the planets' not twinkling we demonstrate that they are close; and this is a demonstration *quia;* and, conversely, on the grounds of their being close we demonstrate that they do not twinkle; and this is a demonstration *propter quid.* (2) And this

311. Aristotle, *Posterior Analytics* I.13.78a30–32.

> comes about because all demonstrations should proceed from items that are better known, and the effects are better known in one way than the causes, for they are better known to us, and the causes are better known in another way than the effects, for they are better known absolutely speaking, or by nature.

The third part deals with the circularity of demonstrations between *quia* and *propter quid.* And such a circularity often comes about in the natural sciences, as for example when Aristotle believed himself to demonstrate the eternity and the immobility of the Prime Mover from what is posterior [*a posteriori*] and by means of *quia est,* and then from what is prior [*a priori*] to demonstrate from the immobility and eternity of the Prime Mover the eternity of motion *propter quid.*

We should note, however, that there is no true circularity here, for that is not possible in demonstrations, unless the same with respect to the same is both better and lesser known, which is impossible, except in the way that will be discussed in the fourth part of this chapter. For example, let us argue *quia est* in the following manner: 'If motion is eternal, then the mover is eternal and immobile; but motion is eternal; therefore, the mover is eternal and immobile'; then, conversely, thus: 'If the mover is eternal and immobile, then motion is eternal; but the mover is eternal and immobile; therefore, motion is eternal'. If, therefore, the first argument is a demonstration, the proposition 'Motion is eternal' has to be better known than the proposition 'The mover is eternal and immobile'. And if the second argument is a demonstration, then, conversely, the proposition 'The first mover is eternal and immobile' has to be better known than the proposition 'Motion is eternal'.

But this converse reasoning must not lead to the same [proposition, having it as the] conclusion to be demonstrated. The first argument, therefore, is conclusive in demonstrating that the first mover is eternal and immobile. But the second reasoning, concluding to the eternity of motion, is question-begging [*petitio principii*] and not a demonstration, for it has a minor premise that is less known than the conclusion. And this reasoning, even if it were a demonstration, would nevertheless not conclude *propter quid,* for there is no causal premise nor causal conclusion here.

The reasoning therefore should be converted thus: 'If motion is eternal, then motion is eternal because of the eternity and immobility of the first mover; but the first mover is eternal and immobile, as has been proved in the first reasoning; therefore, etc.'. So although the proposition 'Motion is eternal' is better known than 'The [first] mover is eternal and immobile', nevertheless, the proposition 'The first mover is eternal and immobile' is better known than 'Motion is eternal because of the eternity and immobility of the first mover'.

And in this way in both cases the demonstration proceeds from items that are better known, indeed, from [propositions] that are better known to us. For what use would it be to us in producing knowledge of the conclusion if the premises were in their nature better known either absolutely speaking, or to God, and [yet] not to us? For it is clear that there would always be question-begging [in the argument], and we would never concede a conclusion doubtful to us on account of premises that are even more doubtful to us, however better known they were to others.

A Doubt

But then there is a serious doubt concerning the second section of this part, which seems to assign the reason why there is a reversion in the demonstrations from the effect to the cause and from the cause to the effect, saying that the effect is better known to us, whereas the cause is better known by nature, or absolutely speaking. I say, therefore, that these words are rather obscure and caused doubts, and made many people err. But it seems to me that they should be expounded in accordance with what has been said. For where do we gain knowledge about the same thing simultaneously with respect to how it is [*quia est*] and why it is [in the way it is] [*propter quid*], unless we know first how it is [*quia est*]? So, of anything that is better known than another with respect to how it is we say that it is better known and prior to us. Since, therefore, in the natural sciences in most cases the effects are better known than the causes with respect to how they are, they are said to be better known and prior to us, but not prior absolutely; indeed, the causes are prior both in their being and by nature.

But then it is asked again why the causes are said to be better known and prior absolutely speaking. And I reply that by this we should only understand that they are prior and better known to us than the effects as far as the perfect cognition of these effects is concerned, and this is cognition *propter quid* [knowing the reason why they are in the way they are]. For knowing only about the effect how it is is its imperfect cognition, which is compatible with wondering very much and asking why it is in the way it is [*propter quid ita est*]. But knowing why it is in the way it is amounts to its perfect cognition, which removes this kind of wondering and asking, as is stated in the preface to the *Metaphysics*.[312] So a cause is said to be better known absolutely speaking in this way, for it is also better known to us with respect to the reason why than is the effect.

312. Aristotle, *Metaphysics* I.1.981a29 et seq.

8.9.4 On the circularity between several propter quid *demonstrations*

(1) And since causes are also causes of one another, as Aristotle declares in bk. 2 of the *Physics* and bk. 5 of the *Metaphysics,* there are circular demonstrations *propter quid,* from one [sort of] cause to another and conversely.[313] (2) For example, in terms of the final cause we know that after a meal one should walk in order to preserve one's health, and in terms of the efficient cause we know that one's health is preserved by taking a walk after a meal.

The fourth part is about the mutual circularity of [several] demonstrations *propter quid.* And it is clear that even this circularity is not a circularity in the strict sense. For the conclusion demonstrated by means of some premise or other is not turned into a premise to prove the previous premise in the converse direction; this reasoning would be question-begging, proceeding from the lesser known to the better known. But in these arguments there are diverse conclusions neither of which becomes a premise in the other argument. For example, let us have the following argument *propter quid* in terms of the final cause: 'That which helps food to descend to the base of the stomach is to be done for the sake of preserving health; but walking after a meal does so; therefore, walking after a meal is to be done for the sake of preserving health'. But in the other direction one argues *propter quid* in terms of the efficient cause thus: 'That which helps food to descend to the base of the stomach preserves health; walking helps food to descend, etc.; therefore, walking preserves health'.

This is also how Aristotle declares in bk. 2 of the *Posterior Analytics* that, in the case of things that are generated in a circular manner from one another, the demonstrations have to proceed in a circle, as for example, from vapor there come to be clouds, from the clouds rain, from rain flooded and humid earth, from which, again, there comes to be vapor, then clouds, etc.[314] Let us take, therefore, an example in the case of the generation of wheat, where three things are generated from one another in a circle, namely, the grain, the ear, and the plant. There will be three immediate and nondemonstrated propositions and another three mediate and demonstrable; and no one and the same will be both demonstrated and [yet] demonstrable. For example, the immediate ones are that the grain comes to be from the ear, and the ear from the plant, and the plant from the grain. The mediate and demonstrable ones will be the other three. The first is that the grain comes to be from the plant, because the

313. Aristotle, *Physics* II.3.195a8–11; *Metaphysics* V.2.1013b9–11.

314. Aristotle, *Posterior Analytics* II.12.95b38–96a7.

ear comes to be from the plant and the grain from the ear; therefore, the grain from the plant. The second is that the ear comes to be from the grain, because the plant is from the grain and the ear from the plant; therefore, the ear is from the grain. The third is that the plant comes to be from the ear, because the grain is from the ear, and the plant from the grain; therefore, the plant is from the ear. It is obvious that there is nothing absurd here, nor is there question-begging in any of these arguments, but all of them proceed from what is better known, nor is it necessary that the same [proposition] should be both better known and lesser known in the same way.

8.9.5 On the circularity between several quia *demonstrations*

(1) Furthermore, between diverse conclusions that entail each other there can be a certain circularity of demonstrations, when both conclusions become, or can become, a premise in the demonstration of the other. This is how Aristotle seems to proceed in the first chapter of bk. 6 of the *Physics*.[315] (2) For he concludes that nothing is divisible into indivisibles, but always into divisibles on the basis of the claim that no continuum is composed of indivisibles; but then again, by the claim that nothing is divisible into indivisibles he concludes that nothing is composed of indivisibles.

The fifth part presents a mode of circularity of demonstrations, which I take to be acceptable in some way. For let us assume that two conclusions *a* and *b* obviously entail each other, that both are demonstrable, that there are several demonstrations by which these conclusions can be demonstrated, and that some of them more evidently entail A than B, and others conversely. I posit, therefore, that Socrates finds a demonstration that manifestly entails A without considering B at all. Clearly, by this demonstration he knows A. But, then, further, by the known A he will go on to demonstrate B, arguing thus: 'If A is true, then A is true; but A is true, as has been demonstrated; therefore, B is true'. And so, by knowing A he will know B. The case is the reverse, however, if Plato finds a demonstration that evidently concludes to B, by which he knows B entirely without considering A, and then, by the known B, he will demonstrate A. Then both demonstrations will produce knowledge from

315. Aristotle, *Physics* VI.1.231a21 et seq.

per se known propositions, which are better known than the conclusion. And it is not impossible that the same with respect to the same is better known and lesser known to diverse persons, as when A is better known to Socrates than B, for this has been demonstrated to him, whereas the case is the reverse with Plato, for the same reason.

But then you would ask, positing the case that Plato considers both these reasonings, whether then A would be known to him by B, and B by A. And I believe that it would not. Nevertheless, A would be demonstrated for him by b, and conversely, B by A. This has been indicated in connection with the first part of the seventh chapter of this treatise, namely, that not every demonstration produces knowledge of its conclusion, but it suffices for a demonstration that it would produce knowledge of its conclusion if the conclusion had not already been known by another demonstration.[316] For these several demonstrations of the same conclusion, whether they are circular or not, are useful, not because the later ones make the conclusion known but because they make it known more evidently. For just as the bright, the just, and the prudent admit of degrees without the admixture of their contraries, so do the firm and the evident. Therefore, although all first and indemonstrable principles, possessed by us in their appropriate manner, are firm and evident, yet there is one that Aristotle declares, in bk. 4 of the *Metaphysics,* to be the firmest and most evident and to be firmer and more evident than all or most others.[317]

Furthermore, because of some objectors I clarify how two conclusions that entail each other are based on diverse arguments and demonstrations, so that by one of these one conclusion is more evidently demonstrated and by another the other. For the claims that every magnitude is divisible to infinity or always into divisibles and that no magnitude is composed of indivisibles mutually entail each other. And yet the first of these is more evidently and directly proved by the argument of Aristotle in bk. 6 of the *Physics,*[318] where he says that over the same or an equal magnitude a mobile body can be moved faster and another more slowly; but the one moving more slowly covers a lesser magnitude in the same time, whereas the faster one covers the same magnitude in a shorter time. Therefore, the one moving more slowly always argues the division of magnitude, and the faster one the division of time; check out the argument if you want.

But Aristotle demonstrates the other conclusion more evidently at the beginning of bk. 6,[319] by the claim that these [alleged] indivisibles cannot be con-

316. See 8.7.1.

317. Aristotle, *Metaphysics* IV.3.1005b12–20.

318. Aristotle, *Physics* VI.2.232a23 et seq.

319. Ibid., VI.1.231a21–b18.

tinuous, nor contiguous, nor in a series, and also by many other arguments. And finally, concerning the circularity of demonstrations, I conclude that it is impossible for two conclusions to be known by one and the same man each by means of the other. But two conclusions can be known by the same man, each by means of the other. For these propositions differ in being composite and divided.[320] But, further, it is also possible that the two conclusions should be demonstrated to one and the same man each by means of the other, although they cannot both be known to one and the same man each by means of the other.

8.10 On some other kinds of demonstration

It remains to say something in particular, beyond what has been determined so far, about indirect [*ad impossibile*] demonstrations, as well as about negative demonstrations, demonstrations of contingent conclusions, demonstrations concerning past and future, coming to be, or having come to be, and modal demonstrations.

8.10.1 The division of this chapter

The tenth chapter discusses certain modes of demonstration that have not yet been clearly discussed. It contains six parts. The first propounds the subjects of the discussion, and the other parts discuss one by one the subjects propounded in this first part.

320. The point of distinction here is that although there is no possible situation in which the first conclusion is known by the second and the second by the first, there is a possible situation in which the first is known by the second, and there is another possible situation in which the second is known by the first.

8.10.2 On indirect demonstration

(1) In connection with indirect demonstration [*demonstratio ad impossibile*] one should check first what has been said about syllogisms *ad impossibile* in the last chapter of the treatise on syllogisms.[321] (2) And to this we now add that an indirect demonstration is not a syllogism but a reasoning put together from a syllogism and several other consequences. For given the syllogism, then from the falsity or the impossibility of its conclusion one has to infer the falsity or impossibility of the premise that is the opposite of the conclusion to be proved, so that from this one can further infer the conclusion to be proved. (3) It is necessary, therefore, in order to avoid question-begging [*petitio principii*] in the syllogism of the indirect demonstration, that the necessary premise and the impossible conclusion be more certainly and evidently so, the former in its necessity and the latter in its impossibility, than the premise that is opposite to the conclusion to be proved is in its impossibility, and than the conclusion to be proved is in its necessity.

The second part is about indirect demonstration. (1) Its first section refers us to another passage; and this is clear.

(2) The second section states that an indirect demonstration is not a syllogism, which is so because a whole integrated from several parts is not any of those parts. But an indirect demonstration is an aggregate of four consequences. The first is a syllogism that, from one premise that is the contradictory of the conclusion to be proved and another evident premise, concludes to an evidently impossible conclusion. The second consequence is the one that from the impossibility of the conclusion infers that one of the premises is impossible, or at least that the premises are incompossible [*incompossibiles*], by means of the principle that impossible or incompatible premises entail something impossible. The third consequence adds to the conclusion now inferred that the premise assumed along with the premise that is opposite to the conclusion to be proved is neither impossible nor incompatible with anything possible, for it is evidently necessary; it then concludes from the other premise by means of the locus from division[322] that the other premise, namely, the one opposite to the conclusion to be proved, is impossible. And the fourth consequence concludes from this last conclusion by means of the locus from contradictories[323] based on the first principle that the conclusion to be proved is necessary, this being that which was to be demonstrated from the outset.

321. See 5.10.6.
322. See 6.6.4.
323. See 6.5.6.

For it is necessary that if one of two contradictories is impossible, then the other is necessary, or that if one is true, then the other is false, given that they are propounded at the same time.

(3) The third section states what is required for avoiding question-begging. And the whole is clear in the way to be explained later, namely, that in an ostensive demonstration the premises have to be evident and better known than the conclusion.

8.10.3 On negative demonstration

> Concerning negative demonstrations, Aristotle adds to what has been and earlier had been said, that there are negative and *propter quid* demonstrations from proper [principles] just as there are affirmative ones, for, as he says, if affirmation is the cause of affirmation, then negation is cause of negation.[324]

What is said in this part can have some doubt attached to it. For if we say that having lungs is the proper cause of breathing, it is not necessary that not having lungs should be the proper cause of not breathing; for a chimera's not breathing is nothing, and a chimera's not having lungs is nothing; and we should not say that one nothing is the cause of another nothing. Likewise, although the earth's being diametrically interposed between the sun and the moon is the proper cause of the moon's being eclipsed, nevertheless, the earth's not being so interposed is not the cause of the moon's not being eclipsed, for the noninterposed earth acts no more on the moon, whether on its light or on its not being eclipsed, than it would if it were totally annihilated and would not be the cause of eclipse; therefore, [it acts on it] in no way. And the answer that claims that the proposition is the cause of the proposition is not valid either, and was dismissed elsewhere; but this should be discussed elsewhere.

We should, however, briefly reply that although there is no causality in the strict sense, nevertheless, we do say that there is causality here according to an analogical concept [*secundum intentionem attributivam*], as is stated in bk. 2 of the *Physics* and bk. 5 of the *Metaphysics*.[325] For just as the cause of the saving of the ship is the presence of the pilot, so too we say that his absence is the cause of the shipwreck. And both are moving causes, as Aristotle says; never-

324. Aristotle, *Posterior Analytics* I.13.78b19.

325. Aristotle, *Physics* II.3.195a13–14; *Metaphysics* V.2.1013b13–15.

theless, the absent pilot does not strictly speaking move anything, and he does nothing more in this connection than he would if he were dead. But we declare his absence to be the cause of the shipwreck only in terms of this concept [*intentio*], and for the reason that its contrary would have been the cause of the contrary, namely, the saving of the ship. Therefore, it is in this way that we say the noninterposed earth to be the cause of the illumination or the noneclipse of the moon, for in the contrary state, namely, interposed, the earth would act to produce the effect of the taking away of the light. But the objection with the chimera is not valid, for it is formed with nonsuppositing terms. The following demonstration, however, proceeds with terms suppositing for something: 'Just as every being that has lungs is breathing because of its lungs, so every being that does not have lungs, because it does not have lungs, is not breathing'.[326]

8.10.4 On immediate and indemonstrable propositions

(1) Still dealing with negative propositions, Aristotle says that of these, just as of the affirmative ones, some are immediate and indemonstrable, others mediate and demonstrable.[327] [A negative proposition is] immediate if neither its subject nor its predicate come under some superior genus, but both are diverse genera, as in 'No substance is a quantity' or 'No action is passion'. (2) But it is mediate, if each or one of them comes under a superior genus under which the other does not, as in 'No surface is a whiteness' or 'No quantity is a substance'. This does not seem to be entirely true, however, for a false or doubtful proposition should not be said to be immediate, and yet these are doubtful and false[, respectively]:[328] 'No substance is a quantity' and 'No action is passion'.

326. If one were to object that even fish and plants are said to be breathing, despite the fact that they do not have lungs, one might reply that what is meant here is breathing in the strict sense of 'breathing-with-lungs', and not in the broad sense of 'exchanging gaseous materials with the environment.'

327. Aristotle, *Posterior Analytics* I.15.79b13–22.

328. According to Buridan, substance is distinct from quantity, but of course he knows well his contemporaries' arguments for their identification. See Buridan, *Quaestiones super octo Physicorum libros Aristotelis,* bk. 1, q. 8; J. Buridan, *Quaestiones in Praedicamenta,* ed. J. Schneider (Munich: Verlag der Bayerische Akademie der Wissenschaft, 1983), q. 7.

In reply to the doubt raised in the fourth part we should briefly say that the aforementioned propositions are not immediate absolutely speaking, for they are doubtful and false, as has been argued. But what Aristotle says in the *Categories* and at the beginning of the *Physics*,[329] namely, that the orders of the categories are neither permutable nor do they coincide, and what the Commentator says in connection with bk. 10 of the *Metaphysics*,[330] namely that the quiddities and essences of diverse categories are diverse, should not be understood to imply that the terms of diverse categories could not supposit for the same things and could not be verified affirmatively of each other; rather, it should be understood that they are never predicated quidditatively of each other. And this is obvious first concerning the most general [terms], and then concerning their inferiors. Nevertheless, the propositions 'No substance is a quantity' and 'No action is passion' are not immediate absolutely speaking [*simpliciter*], but they are said to be immediate in some respect [*secundum quid*], i.e., with an addition, for they are said to be immediate with respect to quidditative predication, so that it is evident that such [predications, namely, the corresponding affirmations] are not quidditative.

8.10.5 On the demonstration of a contingent conclusion

(1) That there are demonstrations of contingent conclusions has been stated earlier, in the seventh chapter of this treatise,[331] although those are not doctrinal or enduring demonstrations yielding [the corresponding acts of] knowledge [*scientiae*] in the strict sense. (2) Nevertheless, one may have doubts concerning this point, for in medical books, and also in books about astronomical predictions and in many others, one finds scientific claims [*scientiae*] and demonstrations about frequently occurring contingent phenomena [*de contingentibus ut in pluribus*], and yet these seem to be demonstrations and scientific claims in the strict sense, for they are both doctrinal and enduring. (3) But the truth is that contingent conclusions do not have doctrinal and enduring demonstrations and [corresponding acts of] knowledge in the strict sense, except insofar as

329. See Aristotle, *Categories* 1.1b16–21; *Physics* I.2.185a28–b4.

330. *Aristotelis Metaphysicorum libri XIIII cum Averrois Cordubensis variis in eosdem commentariis,* 10 comm. 8, f. 257vb G.

331. See 8.7.7.

they would be rendered necessary by adding the phrase 'in most cases' [*ut in pluribus*].

The fifth part raises a certain doubt and solves it concerning the demonstrations of contingent conclusions. And the solution is clarified by giving the example that the following is not always true, although it is true in most cases: 'Summer is hot and dry'. If, therefore, you were to put forward your conclusion in the form 'Every summer is hot and dry' or 'Whenever it is summer, then it is hot and dry', it is obvious that the conclusion is false, whence it is neither known nor demonstrable. But if you formulate it as a particular, as 'Sometimes summer is hot and dry' or 'In most cases summer is hot and dry', these are true and in fact known and demonstrable.

Likewise, if you say that every summer, for the most part [*ut in pluribus*], is hot and dry, so that by the addition 'for the most part' the distribution of the [universal] sign ['every'] is understood to be restricted, so that it would not distribute absolutely for all supposita but for a greater part of them, then this claim is still true and necessary, and, consequently, knowable and demonstrable *propter quid* in an enduring manner. An example is the following: 'Whenever the sun is close to a climatic zone, it is hot and dry there because of the virtual heat and dryness of the sun; but summer in any climatic zone is a time when the sun is close to it; therefore, every summer in that climatic zone is for the most part hot and dry because of the virtual heat and dryness of the sun'.[332] It is in this way that such demonstrations and conclusions are propounded in an equally enduring manner concerning such contingent matters; and, finally, they should be propounded and accepted in this sense.

8.10.6 On the demonstration concerning the past or the future

(1) There are things that have necessary concomitance with one another, so that this cannot be without that, whereas others do not have necessary

332. Since heat and dryness are the proper active qualities of the elements according to Aristotle's theory, they cannot belong to a heavenly body in the strict sense (given that heavenly bodies do not consist of the sublunar elements; rather, they have their own, celestial matter, the fifth element *(quinta essentia),* quintessence or ether), but only 'virtually', i.e., in the sense that the heavenly body in question has its own proper active quality, namely, light, on account of which it has the power *(virtus)* to generate these qualities in the inferior, sublunar bodies.

concomitance with one another, but one has necessary consecution or precedence with respect to the other. And in accordance with this, there are demonstrations about future or past being [*de fore vel de fuisse*] and about coming to be or about having come to be [*de fieri vel de facto esse*]. For if the being [*inesse*] of the one requires the concomitance of the other, then, just as there is a demonstration from the being of the one to the being of the other [*de esse unius ad esse alterius*], so there is one from the future being of the one to the future being of the other [*de fore ad fore*], and from the past being of the one to the past being of the other [*de fuisse ad fuisse*] and from the possible being of the one to the possible being of the other [*de posse esse ad posse*], whether the demonstration be *quia* or *propter quid.* (2) Also, if the concomitance is mutual, then there is likewise a demonstration from coming to be to coming to be [*de fieri ad fieri*] and from having come to be to having come to be [*de facto esse ad factum esse*]. (3) If, however, there is no concomitance, but there is a necessary consecution or precedence of one with respect to the other, then there is no demonstration from being to being, but there is from being to future or past being.

The sixth part deals with demonstrations concerning the past or future. (1) And first it makes a notable remark concerning concomitance, consecution, or precedence, without which or without some of which one cannot demonstrate the [actual] being, or the future or the past being, of one thing by [reference to] the being of another. Then three rules are given. And these, if one provides some examples, are clear. Concerning the first, therefore, it is clear that the following mutually entail or are concomitant with each other: 'the moon's being eclipsed' and 'the earth's being diametrically interposed'. [And so], just as by the moon's being eclipsed one demonstrates with respect to *quia est* that the earth is interposed, so by the fact that the moon was eclipsed one demonstrates that the earth was interposed.

But it seems to me that in this regard there is a counterinstance concerning the future, for the antecedent has to derive here its evidentness from the senses, to which the future is not evident, so it cannot be more evident to us that the moon will be eclipsed than that the earth will be interposed. But with respect to the *propter quid* the case is the same with the future as with the past. For just as it is demonstrable that the moon is eclipsed because of the earth's being interposed, so likewise the astronomer demonstrates that it was eclipsed because of the earth's having been interposed, and again, that it will be eclipsed, because the earth will again be interposed; and likewise that it can be eclipsed because the earth can be interposed.

(2) The second rule is also clear. For, since the [phenomena] mentioned

above are mutually concomitant, then also, if an eclipse comes to be or came to be, it will be known that it comes to be or came to be because the earth's interposition comes to be or came to be. But, because the sun is necessarily concomitant with every light ray of the sun, whenever this ray exists, but since no [particular] ray is necessarily concomitant with the sun, therefore, it is valid and correctly follows that if a light ray of the sun *is,* then the sun *is,* and that if the light ray *was,* then the sun *was,* and if the light ray *will be,* then the sun *will be;* nevertheless, it does not follow that if the light ray of the sun *comes to be* or *came to be,* then the sun *comes to be* or *came to be.* Likewise, it follows that if a creature is, then God is, and that if it was, then He was, and that if it will be then He will be; but it does not follow that if a creature comes to be or came to be, then God comes to be or came to be.

(3) The third rule is also clear, for on the basis of the fact that today is Sunday I know that tomorrow will be Monday, and yesterday was Saturday. And because I know that an animal has matter and soul, I know that it will be destroyed and will die; and because I see a loaf of bread, I know that there was flour. And the astronomer, because he knows that the sky is now configured in such and such a way, demonstrates that there will be a lunar eclipse.

As for terms that supposit for the same and are affirmatively predicable of each other: if they are convertible or are related as superior and inferior, then just as their consequences are from [present] being to [present] being [*de esse ad esse*] (whether absolutely or as a copula) [*sive secundo adiacente sive de tertio*], so they are from future being to future being [*de fore ad fore*], from past being to past being [*de fuisse ad fuisse*], from possible being to possible being [*de posse esse ad posse*], and even from coming to be to coming to be [*de fieri ad fieri*] and from having come to be to having come to be [*de facto esse ad factum esse*]. For if a donkey is or will be, then an animal is or will be; likewise, if a donkey is running or was running, or comes to be or came to be [running], then the same will be said about an animal.

8.11 On the comparison of various demonstrations

(1) Next we have to discuss the comparisons of diverse modes of demonstrations with respect to their agreements and differences. Some of these

have already been mentioned and will be recapitulated; others have not yet been mentioned, but will be. (2) It is a common feature of every demonstration that it produces the knowledge of its conclusion by means of the knowledge of the premises that entail this conclusion. (3) And [it is also a common feature] that such a premise is known earlier in time or by nature than the conclusion is known, and also that it is better known than the conclusion. (4) But to each of these three [features] one should add: "unless this conclusion had already been known and demonstrated by another demonstration" (5) and again that it should proceed from immediate [premises] or from ones whose cognition derives from immediate [premises].

The eleventh chapter deals with the comparisons of demonstrations. And it has seven parts, in which several comparisons of diverse demonstrations are presented.

8.11.1 Four common properties

The first part contains five sections. The first of these propounds the subject of the discussion, and the four others present four common properties of all demonstrations. And all these have already been mentioned and explained, except for the point that these may somehow be doubtful where indirect demonstrations are concerned. Nevertheless, I say that the aforementioned properties taken in the appropriate sense apply also to indirect demonstrations, just as much as to the others. For whatever is propounded assertively in an indirect demonstration before the ultimately intended conclusion should be known earlier and better than the conclusion. But the premise of the syllogism opposite to the conclusion to be proved, and the conclusion of the same syllogism, are not propounded assertively, but rather it is the other premise that is propounded assertively. And in addition, that this conclusion follows from premises propounded assertively, and further that the conclusion [is] stated to be impossible, is propounded assertively. Therefore, it is also assertively inferred that the premise opposite to the conclusion to be proved is impossible. And all this should be more evident and better known than the conclusion, which is inferred and demonstrated from these.

And that the premises have to be better known than the conclusion Aristotle proves in bk. 1 of the *Posterior Analytics* by the following argument: that

because of [*propter*] which something is such and such is even more such and such;[333] and it is because of knowing the premises that we know the conclusion; therefore, we know the premises even more. But one here doubts the rule: 'that because of which something is such and such is even more such and such'. And I reply that this rule presupposes that both are such and such. Therefore, it does not follow that since a man is drunk because of wine, therefore wine is even more drunk; or that if snow is white because of whiteness, then whiteness is even whiter; or that if a donkey is a donkey because of God, then God is even more a donkey; or again in the case of final causes, it does not follow that if a man goes to the marketplace to buy bread, then the bread to be bought goes even more to the marketplace. In the second place I say that the rule does not only presuppose that both are such and such, but also that the second is such and such because of that because of which the first is such and such. Therefore, it does not follow that if a wall is white because of a painter, then the painter is even whiter—although perhaps both are white—because it is not because of the painter being white that the wall is white, except by coincidence [*per accidens*]; for it is accidental to the wall's becoming white that the painter is white. But the rule properly applies in the original case, for we know the conclusion because of our knowing the premises, and not because of not known premises but [precisely] because they are known.

*8.11.2 The property [*proprietas*] of demonstration in the strict sense*

But since earlier we said that 'demonstration' in the strict sense is restricted to enduring and doctrinal demonstrations, now we say that it is common to every demonstration in the strict sense that it has a conclusion that is necessary, cannot be otherwise, is ingenerable, is incorruptible, is perpetual and is *per se,* and that it is from premises of this sort, made up of common terms.

The second part is also obvious from what has been said. For it was clarified in the seventh part of this treatise[334] that because it is enduring, a demonstration in the strict sense requires the necessity of the conclusion and of the

333. Aristotle, *Posterior Analytics* I.2.72a29–30.

334. See 8.7.9.

premises, and because it is doctrinal, it requires common terms. It also follows that if the premises and the conclusion are necessary, then they are first [*primae*], as has been clarified in the second part of the fifth chapter.[335] But it also follows that if they are necessary, then they cannot be otherwise, and they are perpetual and incorruptible in the sense in which Aristotle states this.

Hence we have to note that, as has often been stated elsewhere, we do not call a proposition necessary because it exists of necessity, for in this way only God is necessary, nor because it is necessarily true, for it can be not true, since it is able not to be, and if it is not, then it is not true. But it is said to be necessary because whenever it or one similar to it is propounded, then it is true and cannot be false, keeping its signification and the signification of its terms constant; or again because things cannot be otherwise than in the way it signifies them to be, interpreting this [phrase] in the sense settled and clarified earlier.[336] And it is in this same sense that one should appropriately expound the claim that it cannot be otherwise; and likewise that it is ingenerable and that it cannot turn from truth into falsity; and that it is incorruptible, since it is not variable with respect to change from truth to falsity, or from [having the property of] things-being-in-the-way-it-signifies to [having the property of] things-being-otherwise. Nevertheless, the things signified by it do not have to be necessary, ingenerable, incorruptible, or perpetual.

8.11.3 On the comparison of propter quid *demonstration to others*

(1) Since a *propter quid* demonstration in the strict sense is enduring and doctrinal, whatever applies to an enduring and doctrinal demonstration will apply to it too. (2) But it is an exclusive feature of every *propter quid* demonstration in the strict sense that it should proceed by means of a cause and from proper [items] with respect to both causality and the convertibility of the terms, (3) and so it is necessary that the major extremity apply to the middle term and the middle to the minor extremity 'with respect to what the thing is' [*secundum quod ipsum*].[337] (4) And for this rea-

335. See 8.5.2; the critical text refers us here to the sixth chapter, but it is the fifth chapter that seems to be the correct reference, which is also the one given by some of the codices according to the critical apparatus.

336. See *Sophismata,* chap. 2, Fourteenth conclusion, n. 50.

337. I have moved the section number from here to the beginning of this clause, on the

son he who demonstrates in this way cannot descend from one genus to another, unless one comes under the other. And then in the descent one has to take the items that belong to the superior science as being restricted in accordance with the needs of the inferior sciences. (5) Again, every demonstration of this type is such that its conclusion and one of its premises are causal propositions. (6) And if any one of these properties fails to apply to it, the demonstration will be *quia* and not *propter quid.*

The third part compares a demonstration *propter quid* in the strict sense with other demonstrations, and all *propter quid* demonstrations in the strict sense with themselves, namely, with respect to their agreements. For all agree with one another with respect to the features stated here.

And there are six sections in this part. (1) *Propter quid* demonstrations agree with many *quia* demonstrations in [what is stated in] the first section.[338] But they differ from those that apply to contingent and singular things.

(2) But in terms of the second section all *propter quid* demonstrations in the strict sense differ universally from those that are not said to be *propter quid* in this way, but rather *quia,* apart from those from which they differ in terms of the fifth section, which will be discussed later. For on account of the fact that they have to proceed by means of causes, they differ from those that do not consider the difference between cause and effect on the part of the things signified, for example, mathematical demonstrations, as was mentioned earlier, and also from those that proceed from what is posterior [*a posteriori*], and which demonstrate the being of causes by means of the being of the effects. And because they have to proceed from proper [causes or terms], they differ from those that proceed in terms of nonproper causes or by means of nonconvertible terms.

(3) The third section infers that the premises and conclusion have to be *secundum quod ipsum,* which follows from [their being *per se* and] consisting of proper [terms]; for a proposition is said to be *secundum quod ipsum* because it is *per se* and universally convertible.

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basis of Buridan's subsequent comment on what he identifies as section (3). I have also changed the subsequent numbering accordingly.

338. The critical text here has: "Et in prima clausula demonstrationes 'propter quid' conveniunt [T95rb] in multis cum [K178vb] demonstrationibus 'quia'." But in the apparatus we also have: "in multis cum] ET cum multis V in multis." Therefore, given the context, in the translation I follow the reading: "conveniunt cum multis demonstrationibus 'quia'."

First Doubt

But then a doubt arises. For given that *secundum quod ipsum* presupposes *de omni,* it follows that there could not be a *propter quid* demonstration in the third figure, since it does not conclude *de omni,* nor in the second figure, for [there] one premise and the conclusion are negative, and the predicate of a negative proposition does not inhere in the subject, but rather it is removed from it; indeed on the basis of these objections we could have a *propter quid* demonstration only in the first figure.

And I respond that in fact, if we take [the phrase] 'most powerful demonstration' [*demonstratio potissima*] so strictly and exclusively that it makes one know perfectly that the predicate is universally and truly predicated of something [*de {ali}quo omni vere dicitur*] of which the subject is universally truly affirmed [*et de quo omni {subiectum} vere affirmatur*],[339] it is necessary for the universal conclusion to be affirmative and universally convertible, and consequently *secundum quod ipsum.* And if the universal [conclusion] is sometimes negative, then this has to be because it implies a universal affirmative and *secundum quod ipsum* or because it follows from one. Therefore, I conclude that such a demonstration can come about in a perfect manner only in the first figure.

These claims I clarify in the following manner. If I know that every triangle has three, etc. insofar as it is a triangle [*secundum quod triangulus*], by virtue of this reduplication I know that every triangle has three, etc. and that everything having three, etc. is a triangle and that nothing other than a triangle has three, etc. And so I know of everything in which to have three, etc. inheres [*inest*] that it inheres in them, for [it inheres] in each of them. And I also know of everything in which it does not inhere that in them it does not inhere. But if I know only in particular that some triangle has three, etc., I do not know whether it inheres in every triangle or whether it does not inhere in anything else. Therefore, I know very imperfectly that such a subject is predicated of every[thing falling under the] predicate and that such a predicate inheres in every[thing falling under the] subject.

And if I know that a figure has three, etc., but I do not know whether every figure does, or what figure does and what figure does not, even if I know that every isosceles has three, etc., I do not know by this whether something else does or whether nothing else does. Indeed, what is more, if I know that every triangle has three, etc. and do not know whether this is *secundum quod ipsum,*

339. Here I have emended the text on the basis of the apparatus. Buridan's point seems to be that if there is a C such that both the predicate P and the subject S are universally (and convertibly) predicated of C, then also P is universally and convertibly predicated of S, i.e., the proposition 'Every S is P' is *secundum quod ipsum.*

I do not know whether something else or nothing else has three, etc. But all this ignorance is removed if I know this *secundum quod ipsum.*

Where absolutely negative [propositions] are concerned it is obvious that none of them is properly called *secundum quod ipsum,* except on account of [a corresponding] affirmative. For if a negative were *secundum quod ipsum,* then the following would be also: 'No man is a brute' or 'No rational animal is an irrational animal', since 'animal' is exhaustively and exclusively divided into 'man' and 'brute', or into 'rational' and 'irrational'. Or again, the following would be *secundum quod ipsum:* 'Nothing other than a triangle (or 'no non-triangle') has three, etc.'. But these are not *secundum quod ipsum* in the strict sense. And this can easily be seen concerning 'man' and 'brute' or even concerning 'rational animal' and 'irrational animal'. For if it applies to a man that insofar as he is a man [*secundum quod homo*], he is not a brute, then this would apply to nothing other than a man, unless it applied to something insofar as it is a man. But these claims are false. For it applies to a stone as well as to a man that it is not a brute, and yet this does not apply to a stone insofar as it is a man.[340]

But what has been said about the triangle is more difficult. Nevertheless, it seems to me that a predicate is not predicated of some subject *secundum quod ipsum,* whether affirmatively or negatively, if it is also predicated in this manner of predication of some other subject, of which the first subject is not affirmed. For, since having three, etc. is predicated of a triangle *secundum quod ipsum,* it is not predicated of something else of which 'triangle' is not truly affirmed. But having three, etc. is truly denied not only of the subject 'other than a triangle', but also of 'chimera'; for a chimera does not have three, etc., and yet a chimera is not other than a triangle, although they are not the same, either.[341]

And if you say that we should presuppose the constancy of terms, then I would reply that he who holds this misses the point in question,[342] for he reduces an absolutely negative to an affirmative [proposition] the predicate of which is changed from finite to infinite; and this I would indeed concede to be *secundum quod ipsum.* For example, I concede this to be *secundum quod ipsum:* 'Every man is a non-brute animal', and this: 'Every rational, mortal animal is a non-irrational animal', and likewise this: 'Everything other than a triangle is

340. This is because it is not a man.

341. 'A chimera is not other than a triangle' is true because it is a negative proposition whose subject supposits for nothing. It is for the same reason that 'A chimera is not the same as a triangle' and 'A chimera does not have three angles, etc.' are also true.

342. *Excedit propositum,* literally, 'goes beyond the point'. But in the apparatus we also have *concedit propositum,* which might be translated as '[already] concedes the point'.

[something] non-having three, etc.'. In general, any affirmative that is a *secundum quod ipsum* affirmative is also thus with the same terms changed with respect to finitude and infinity. Thus, if this is *secundum quod ipsum:* 'Every man is risible', then this would also be: 'Every non-man is non-risible' and also this: 'Everything other than a man is other than something risible' (or 'is non-risible'). And since these entail negatives, sometimes—not properly, but analogically [*secundum attributivam locutionem*]—we say that those negatives are *secundum quod ipsum,* as in the case of 'No man is a brute animal', for it follows from 'Every man is a non-brute animal', and likewise with 'Nothing other than a triangle has three, etc.', because it follows from 'Everything other than a triangle is something not-having three, etc'.

Therefore, it is in this way that we should also understand what has been said concerning proper causes, namely, that if affirmation is the proper cause of affirmation, then so is negation of negation. For if the earth's being interposed is said to be the proper cause of the eclipse of the moon, then the earth's being noninterposed is said to be the cause of the non-eclipse of the moon.

(4) The fourth section infers that a *propter quid* demonstration in the strict sense cannot descend from one genus to another. This claim is inferred by Aristotle from the claim of the preceding section; for with regard to the former he says: "Propter ipsum [lit., because of that], therefore"—i.e., *secundum quod ipsum*—"the middle has to inhere in the third and the first in the middle."[343] And with regard to the present claim he adds: "Hence, he who descends from another genus cannot demonstrate."[344] And by 'genus' Aristotle understands that first subjected genus of a science that was considered in the fourth and the sixth parts of the third chapter of this treatise.[345] The sense of this claim, therefore, can be that since the first subjected genera of entire sciences are diverse, whatever is demonstrated strictly *propter quid* of one will not be so demonstrated of the other, for the same cannot be proper to both, nor could it apply to both *secundum quod ipsum.* Therefore, just as these subjects are diverse, so the proper attributes demonstrated of them should be diverse *secundum quod ipsum.* But of these diverse subjects there cannot even be demonstrations *secundum quod ipsum* by the same principles, for just as they do not have the same proper attributes, so also they do not have the same middle term; and if the middle term is not the same, then the principles, i.e., the premises of demonstrations, are not the same either, for the middle term figures in both premises.

343. "Propter ipsum ergo"—idest 'secundum quod ipsum'—"oportet medium tertio et primum medio inesse." Aristotle, *Posterior Analytics* I.6.75a35–36.

344. Ibid., I.7.75a38–39.

345. See 8.3.4.; 8.3.6.

Second Doubt

But at once there seems to arise some doubt, because there are common axioms [*communes dignitates*], which are presupposed by all or several sciences and which they use in their demonstrations, and we also say that the subordinate science presupposes the superior one, which only happens because from the [propositions] demonstrated in the superior science we descend to demonstrate those to be demonstrated in the subordinate science.

Therefore, it was in order to remove these doubts that we added in this section 'unless one comes under the other', for the first and most common principles, which are the properly metaphysical ones, are presupposed by all other sciences, and [these sciences] use them sometimes, although with appropriation, because all the subjects of these other sciences are subordinated to the first and proper subject of metaphysics. And this is how the common and proper principles of geometry are used by optics and astronomy. And it is also for the same reason that principles such as 'If from equals you take away equals, the remainders are equal', which are proper to common mathematics [*communi mathematicae*], whose proper subject is what is quantified [*quantum*] or quantity [*quantitas*], are used, although with appropriation, by geometry as well as by arithmetic, for their proper subjects are subordinated to the general subject of mathematics.[346] And it is in this way that demonstrations of one science descend to another because of some subordination of the [three] kinds mentioned in the second part of the ninth chapter.[347]

But then another objection immediately arises. Since demonstrations should proceed from proper [principles], and the principles of the superior science are not proper to the inferior science, how does the inferior science use the principles or conclusions of the superior science? And to solve this it is also stated in the fourth section that in such a descent from the superior science to the inferior one, it is necessary to assume the [principles] that come from the superior science to be restricted [to the inferior science]. For example, a principle proper to metaphysics, 'It is not possible [for the same attribute] to inhere [*inesse*] and not to inhere in the same [subject]',[348] is assumed in arithmetic [in the restricted form] that it is not possible for the same number to be even and not even, and in geometry that it is not possible for the same magnitude to be simultaneously equal and not equal to itself in the same respect. And the doctor says that it is not possible for the same wound to be both curable and not curable. And likewise, general mathematics says that

346. The proper subject of arithmetic is number, which is discrete quantity, whereas that of geometry is magnitude, which is continuous quantity.

347. See 8.9.2 (A Doubt).

348. Aristotle, *Metaphysics* IV.3.1005b19–20.

whichever quantities are equal to a third are mutually equal. But geometry says: 'Whichever magnitudes are equal to a third magnitude, etc.', and arithmetic: 'Whichever numbers [are equal to a third], etc.', and optics: 'Whichever visual lines, etc.'. And the natural scientist in considering several times [i.e., durations] says: 'Whichever times, etc.'.

And this is what Aristotle intends when he says: "Any of these [common truths] is sufficient inasmuch as it is in the genus, etc."[349] And later he adds: "Any indirect demonstration assumes that what is asked applies [to the subject] either affirmatively or negatively, and [it assumes] this not universally, but as is sufficient, and it is sufficient in a genus; and I say 'in a genus' [meaning] the genus relevant to the demonstration."[350]

(5) The fifth section states that in every *propter quid* demonstration in the strict sense, one premise and the conclusion have to be causal propositions. And this was clarified earlier.

(6) The sixth section states that if a demonstration fails to meet any of the aforementioned conditions, then it is not said to be *propter quid* in the strict sense. Whence one may infer that there are many knowable and demonstrable attributes applicable to several subjects that are also perfectly within the genus of such conclusions and yet are not absolutely perfectly knowable and demonstrable. And so these demonstrations will not be said to be *propter quid* strictly and perfectly, even if no more perfectly [*propter quid* demonstration] is possible.

For example, even if, following the customary manner of speaking, we were to say that 'having three, etc.' is strictly and perfectly demonstrated of a triangle, nevertheless, this is not possible with respect to an isosceles, of which, however, this is known and demonstrated most perfectly[351] in the genus of such conclusions. That is, if under the demonstrated conclusion 'Every triangle has three, etc.', we assume the minor 'Every isosceles is a triangle', we

349. Aristotle, *Posterior Analytics* I.10.76a42–b3. That is, in a particular demonstration in a particular science, these common truths need not be assumed in their full generality, but their "appropriated" or restricted forms suffice for the demonstration.

350. Ibid., I.11.77a22–26. For example, consider the following indirect demonstration: 'Five is an even number, and any even number is divisible by two; therefore, five is divisible by two; but this is impossible; therefore, it is not the case that five is an even number, whence five is not an even number'. Here the last consequence obviously assumes that five is either even or not even, which is but an "appropriated" or restricted form of the common principle that any predicate applies to any subject either affirmatively or negatively, that is to say, for any P, an S is either P or not P.

351. *Perfectius.* Strictly speaking this is the comparative form, but I translated it in the superlative in view of the context, given that Buridan's point is that this conclusion cannot be more perfectly demonstrated *propter quid.*

will conclude that 'Every isosceles has three, etc.'. And this will be known perfectly in the genus of such conclusions, so that it could not be known more perfectly, yet it would not be known absolutely perfectly, for by virtue of such a conclusion it is not known, nor can it be known of everything in which the predicate inheres that it inheres in them, as was said earlier.[352] The attribute or predicate and the middle term could be restricted, however, so that the demonstration will be *secundum quod ipsum,* as in arguing thus: 'Every isosceles having an extrinsic angle equal to the intrinsic angle[s] opposite to it is an isosceles having three angles equal to two right angles; but every isosceles is an isosceles having an extrinsic angle, etc.; therefore, every isosceles is [an isosceles][353] having three angles, etc.'.

8.11.4 On the most powerful demonstrations

Demonstrations in the first figure, and especially in the first mode of the first figure, are more powerful and more able to produce knowledge than those in the other figures and modes.

The fourth part makes a certain comparison between demonstrations with respect to syllogistic figures and modes. Now this is clear in a literal sense. But I do not mean that every demonstration in the first figure is more powerful than any demonstration in any other figure and mode, unless we add the phrase 'other things being equal'. But some, indeed, many, in the first figure are more powerful than those in the other figures or modes can be. Therefore, to prove this comparison, Aristotle put forward several arguments.[354] And I should briefly touch on them. One is that the first figure evidently infers its conclusion from its premises by *dici de omni* or *dici de nullo,* but the others do not evidently conclude until their inference has been proved by the first figure. And this is what we mean when we say that the modes of the first figure are perfect and those of the others are imperfect.

Another argument is that a demonstration that produces knowledge *secun-*

352. By virtue of the conclusion that every isosceles has three, etc., we do not know that every triangle has three, etc.

353. I have inserted this to preserve the restriction of the predicate of the major premise—after all, the conclusion will be *secundum quod ipsum,* i.e., universally convertible only with this restriction—although apparently none of the manuscripts provides this restriction in the conclusion.

354. Aristotle, *Posterior Analytics* I.14.79a19–33.

dum quod ipsum is more perfect than a demonstration that does not; but only the first mode of the first figure produces knowledge in this way; therefore, etc. The major and the minor of this argument were sufficiently justified earlier.

Another argument is that *propter quid* demonstrations, and especially *propter quid* demonstrations in the strict sense, are more powerful and more able to produce knowledge. But in most cases *propter quid* demonstrations are in the first mode of the first figure, and in general all those that are said to be *propter quid* in the strict sense are in this mode, as was said earlier.

The fourth argument is that a thing is better and more perfectly known by its definition than by any other predicate. Whence it is said in bk. 7 of the *Metaphysics:* "We think we know each thing most fully when we know [what it is, e.g.,] what a man is, or what fire is, rather than [when we know only] what it is like, or how big it is, or where it is, etc."[355] But it is only by the first mode of the first figure that we demonstrate the definition of the definitum, for this has to be demonstrated universally and affirmatively, and only that mode concludes to a universal affirmative. And this argument will also be confirmed later, when it will be shown that universal demonstrations are more powerful than particular ones, and affirmative demonstrations more powerful than negative ones.

The fifth argument argues for the same point on the grounds that we usually say that mathematical doctrines are the most certain of all, and they use mostly the first mode of the first figure in their demonstrations, although I do not believe that the mathematical sciences are the most certain absolutely speaking, but rather that metaphysics is so, as should be clear from the introduction to the *Metaphysics.*[356] But they are said to be the most certain with respect to the method of demonstration, for their demonstrations proceed for the most part in the first mode of the first figure and with convertible terms. But they are not more certain than others with respect to the certainty [*evidentia*] of their principles. For the whole of geometry presupposes that magnitude is not composed of indivisibles, and this is very doubtful and not known, except by means of other sciences. And the geometer does not know what sort of thing a line or a point or a triangle is, unless he knows this from metaphysics. And if someone does not know this, then the propositions formed with these terms are not evident to him. The geometer therefore states that every right angle is greater than any acute angle, which, nevertheless, by virtue of the proper sense of the terms [*de virtute sermonis*], is false.[357] But it is the task of

355. Aristotle, *Metaphysics* VII.1.1028a36–b1.

356. Ibid., I.2.982a25–29.

357. It is not clear why Buridan would want to hold that this claim is properly speak-

metaphysics to show the various senses of mathematical principles in the way they should be presupposed and taken in mathematics.

8.11.5 On the power of universal and particular demonstrations

Other things being equal, universal demonstrations are more powerful and more able to produce knowledge [*magis facientes scire*] than particular ones.

The comparison stated in the fifth part can be justified if we distinguish [several types of] universal demonstrations. For a demonstration is said to be universal in one sense because the conclusion and the premises have distributed subjects; whereas demonstrations are said to be particular because they cannot entail universal conclusions, i.e., ones with distributed subjects, but only particular or indefinite ones, as in all modes in the third figure and in four modes in the first figure, but in three in the second.

In another sense a demonstration is said to be universal because the conclusion and the premises are *secundum quod ipsum;* and it is said to be particular if it is not so.

And in yet a third sense demonstrations are said to be universal because they consist of common and universal terms; in this sense they are called singular if they contain singular terms. And in this sense, demonstrations that consist of more common terms are said to be more universal. It might appear *prima facie* that particular demonstrations or the less universal ones would be more powerful, for to know a thing in general [*in universali*] is to know it and others according to a common concept, and this is to know the thing only in a confused manner, whereas to know the thing in particular and in terms of its proper concept [*intentio*] is to know it in a determinate and more perfect manner; but a thing is known better and more perfectly if it is known deter-

ing false. Perhaps he takes it that the geometer's claim in its strict sense should concern separately existing angles rather than the angles of really existing objects that have angles, in which case, given that there are no such separately existing angles, the claim is false. In any case, it appears that he definitely wants to hold that the geometer's claim to knowledge strictly speaking has to be false, because, not knowing the nature of the things he is talking about, he, insofar as he is a geometer, and only on the basis of geometry, does not really know the propositions he forms about these things, except insofar as he presupposes his principles from the superior science, namely, metaphysics.

minately than if it is known only in a confused manner. And this is why it is stated in bk. 2 of the *Ethics:* "Universal claims are rather empty [*inaniores*], whereas the particular ones are more genuine [*veriores*]."[358]

Again, I have knowledge of man to a greater extent [*potius habeo scientiam de homine*] if I know that he is risible than if I [merely] know that he is an animal, although 'animal' is more universal than 'man'. Likewise, if I know that this is a man, then I do not doubt that this is an animal. But if I know that this is an animal, on this basis I still do not know whether it is a brute or a man. Therefore, knowing more universally leaves more doubt than knowing more specifically. But [a piece of] knowledge is more perfect and powerful [*potior*] concerning a thing if it leaves less doubt about it. And this is confirmed, because as Aristotle argues,[359] someone who knows this and that knows more than the one who knows only this and not that. But someone who knows in general [*in universali*] that an animal runs, on this basis does not know in particular [*in speciali*] that a man runs, but someone who knows in particular that a man runs also knows that an animal runs. Therefore he knows more and knows better.

Again, more evident principles render a science more evident. But particular principles are more evident and more undoubtedly known than universal ones. The major is justified on the grounds that for us the evidentness of principles derives from the senses, memory, and experience, and we need further induction and experience in many cases before the intellect becomes certain about a universal principle. But a particular proposition at once becomes evident to us from one sensation or experience; for if you feel this fire, at once you will know that this fire is hot, yet it is not certain whether every fire is hot, and a doctor by one experience at once knows that some piece of rhubarb purges bile, not yet knowing that every rhubarb does so; and in general nobody who knows a universal can doubt a particular if he attends to it, but someone who knows a particular may well doubt a universal. Therefore, a particular is better known and more certain.

But we can respond if we first distinguish universal and particular demonstrations with respect to their more general [*communior*] and more specific [*specialior*] terms, other things being equal. Then I state the following two conclusions. The first is that the more general demonstrations are more evident and they produce more evident cognition or knowledge because universals are better known to us, as has been declared in the preface of the *Physics.*[360] And the determinate cognition of more specific terms presupposes the cogni-

358. Aristotle, *Nicomachean Ethics* II.7.1107a30–31.

359. Aristotle, *Posterior Analytics* I.24.86a11–12.

360. Aristotle, *Physics* I.5.189a5–7.

tion of more common terms, since the superior terms are placed in the definitions of inferior terms. The fact that the most powerful demonstrations should proceed from proper [terms] is no objection to this thesis, for the most common subject, namely, 'being', has proper and convertible attributes, such as 'one', 'same', 'diverse', 'prior or posterior', 'cause or caused', etc., as also do the specific subjects, in the way that 'man' has 'risible', or 'number' has 'even or odd', etc. Therefore, it is in this way that we say that the superior sciences are more certain with respect to their evidentness than are the subordinate sciences. And in general the sciences involving inferior terms presuppose, in the order of doctrine, the sciences of more common terms.

But I posit the further conclusion that things signified by particular terms are more perfectly known when to the science and demonstrations consisting of common terms we add the science and demonstrations consisting of specific terms than when we only have the science and demonstrations concerning those particulars in general terms. And this is what Aristotle intends to say in bk. 2 of the *Ethics*[361] when he declares that more universal, i.e., more general, statements are rather empty, i.e., they produce imperfect cognition of the things signified, whereas particular statements, i.e., ones in more specific [terms]—and here you should append: superadded to those more general and more universal ones—are more genuine, i.e., they more perfectly and plainly explicate the truth about the things in question, and in the practical [sciences] that Aristotle was talking about, they better prepare the agent for acting [*plus perficientes ad operationes*].

But you will go on to ask further: Although it is not to be doubted that a science aggregated from the general and the specific is more perfect than the general alone, nevertheless, which one is more perfect, the general without the specific, or the specific without the general? And I respond that the general one may very well be a science without the specific, but the specific is not a science without the general. For the evidentness of specific terms and principles depends on the evidentness and assumption of general terms, principles, and conclusions.

Furthermore, if we were to distinguish universal and particular demonstrations with respect to the premises and conclusions having distributed or nondistributed subjects, on the basis of which we call syllogisms that are in *Barbara, Celarent, Cesare,* and *Camestres* universal and those that are in the other modes particular, then I would state two further conclusions. The first is that a particular never appears to be less evident than a universal, but rather conversely, as has been correctly argued. For nobody would concede that every triangle has three, etc. without also conceding that a triangle or some triangle

361. Aristotle, *Nicomachean Ethics* II.7.1107a30–31.

has three, etc. The second conclusion is that a universal demonstration should be said to be more powerful in producing more extensive knowledge. For the universal produces knowledge concerning everything [*de omni*], whether affirmatively or negatively, and the particular does not do so concerning everything [*non de omni*]; and it also makes one know more determinately, for under a universal I may determinately descend to any suppositum, which I cannot do with the particular; and I know more in knowing the universal, for along with it I also know the particular, if I attend to it; but in knowing the particular I do not thereby know the universal, even if I go on to attend to it as much as I am able.

Furthermore, if we make a distinction within universal and particular demonstrations on the basis of whether they are *secundum quod ipsum* or not, then we should also say that just as several *quia* demonstrations are more evident than are *propter quid* demonstrations, so nothing prevents demonstrations that are not *secundum quod ipsum* from being oftentimes more evident than those that are, since more universal demonstrations are much more powerful than others in producing knowledge and leave less doubt about the things in connection with which one has knowledge and demonstrations.

And this is clear first because *secundum quod ipsum* adds something to *de omni* and *per se,* namely, appropriation, and so one knows more by knowing *secundum quod ipsum* than by knowing *de omni* or *per se* only; second, because demonstrations that are strictly said to be *propter quid* and that are the most productive of knowledge are also *secundum quod ipsum;* third, because these occur in the first mode of the first figure, and so are the most productive of knowledge; fourth, because as was said earlier, it is in this way and not otherwise that we know with respect to everything in which the predicate inheres that it does inhere in them, and with respect to all those in which it does not inhere that it does not inhere in them; fifth, because until one knows *secundum quod ipsum* one should always doubt the reason why such a predicate inheres only in such a [subject]; sixth, because Aristotle says: "A universal is one and determinate [*finita*], whereas particulars are many, and often indeterminate [*infinita*] for us; and such are less knowable and demonstrable";[362] seventh, because one who knows a universal can immediately know the particular by subsumption, as when we know that every triangle has three, etc., at once, subsuming that a figure or an isosceles is a triangle, we then know that a figure or an isosceles has three, etc., and [we] also [know] in what respect [*secundum quid etiam*],[363] namely, insofar as it is a triangle. But when we know the particular, from that we cannot infer the universal.

362. See Aristotle, *Posterior Analytics* I.24.86a4–10.

363. Or, according to the apparatus, "and [we] also [know this] *secundum quod ipsum.*"

8.11.6 On the power of affirmative and negative demonstrations

Likewise, we also say that affirmative demonstrations are more powerful than negative ones.

This comparison, stated in the sixth part, is proved by Aristotle first on the grounds that a demonstration that needs fewer [things], other things being equal, is more perfect.[364] But even if every demonstration needs three terms and two premises, nevertheless, a negative demonstration needs two kinds of propositions, namely, an affirmative and a negative. But an affirmative demonstration uses only one kind of proposition, namely, affirmative [ones].

Again, if an affirmative proposition is better known, prior to, and more powerful than a negative, it is reasonable that the same should hold for demonstrations. But an affirmative proposition is better known, prior to, and more powerful than a negative; for it is prior, on account of its simplicity, since a negative adds to the affirmative a negative syncategorematic [term]; and it is also better known and more powerful, insofar as it is related to the negative as having is to lacking. Again, an affirmative proposition is more powerful than a negative, for pure affirmatives are able to demonstrate a pure affirmative, but pure negatives cannot demonstrate or syllogize a negative, nor can they demonstrate an affirmative. Also, an affirmative has the power to demonstrate an affirmative as well as a negative, namely, an affirmative with another affirmative, and a negative with a negative; but a negative does not have the power to demonstrate an affirmative. Furthermore, an affirmative entails a negative by means of a formally valid consequence, namely, by changing the predicate with respect to finitude and infinity, but a negative never entails an affirmative.

Again, demonstrations *secundum quod ipsum* and demonstrations *propter quid,* which are more powerful than others, are more strictly and more principally affirmative than negative, as was said earlier; therefore, [affirmative demonstrations are more powerful than negative ones]. Again, I know a thing better if I know what it is than if I know what it is not; and likewise if I know what the thing is like than if I know what it is not like; and so on for the other categories.

364. Aristotle, *Posterior Analytics* I.25.

8.11.7 On the power of ostensive and indirect demonstrations

We also claim that ostensive demonstrations are prior to indirect [*ad impossibile*] demonstrations.

This comparison is obvious, for an ostensive and an indirect demonstration proceed using the same terms and to the same conclusion. But since a demonstration has to proceed from things that are known, one that proceeds from absolutely [*simpliciter*] known [principles] has to be more powerful than another that proceeds from [principles] that are not absolutely and strictly known, but only in a certain way [*secundum quid*]. But an ostensive demonstration proceeds from absolutely known truths, whereas an indirect demonstration proceeds from falsities, which cannot be known absolutely but only in a certain way, for they are known to be false. Therefore, [ostensive demonstrations are more powerful than indirect ones].

Again, a reasoning that proceeds from what is better known to what is lesser known, as in the case of an ostensive demonstration, is more powerful than a reasoning that proceeds from what is lesser known to what is better known. But an indirect demonstration, as far as its syllogism is concerned, proceeds from what is lesser known, for the false premise and the false conclusion are not known and cognized, as has been said, except in a certain way, since they are known to be false. But in this way the conclusion is clearer and better known than the premise. For it is on this basis that from the evident impossibility of the conclusion we conclude and prove the impossibility of the premise.

Again, other things being equal, the shorter way is the better. But an ostensive demonstration is shorter than an indirect demonstration, since the latter still needs a number of other consequences after the syllogism.

8.12 How knowable questions should be settled

(1) Now we have to go on to see how knowable questions are settled, or how they can and should be settled, and how one can [come to] know what is doubted and asked about. (2) For to some people it seems that

the question 'What is it?' [*quid est*] does not ask about a predicate of the subject, but it asks for the definition, which states neither being [*esse*] nor non-being, as Aristotle says in bk. 1 of the *Posterior Analytics*.[365] And for this reason it seems that this question is not settled by a demonstration, nor is what is asked by such a question made known by a demonstration. (3) And in this way it also appears to some people that the question 'For what reason?' [*propter quid*] does not ask about a predicate of a subject, but it presupposes that the predicate inheres [*inesse*] in the subject, and it asks about the cause of the inherence [*causam inhaerentiae*]; and so it also seems that it cannot be settled demonstratively, for every demonstration is a syllogism that infers a predicate [stated] of the subject. (4) But I say that every question asks about a predicate of the subject, for the respondent, if he is to fulfill the request by appropriately responding, has to state the predicate of the subject in the response.

The twelfth and last chapter of this treatise will deal with the ways in which the knowable questions should be settled, and in which the things asked about should be known. And it contains six parts.

8.12.1 That every question asks about a predicate of a subject

The first [part] shows that every question asks about a predicate of the subject. The second concludes that every question is knowable as a principle or as something knowable by a demonstration or by several demonstrations. The third and the fourth deal in particular with the question 'What is it?' [*quid est*]. The fifth deals with the question 'For what reason is it?' [*propter quid est*]. And the sixth with the questions 'Is it?' [*si est*] and 'How is it?' [*quia est*].

The first part contains four sections. (1) The first states the aim of the chapter and is quite clear. (2) The second asks about the question 'What is it?' (3) The third about the question 'For what reason is it?' (4) The fourth solves both problems. And all these sections would be clear if that solution were explained.

We should note, therefore, that in every question, properly so called, something is known, as was said in the third chapter of this treatise,[366] and some-

365. Ibid., I.2.71a19–22.

366. See 8.3.3 (1).

thing is doubted and is asked. And neither the question nor the doubt comes to a close until what is sought has been found and manifested; however, when it is found and manifested, the doubt comes to an end, but not before. But if you ask and doubt 'What is this?', the question and the doubt will not come to an end for you until the proposition answering the question is manifest for you, affirming a predicate of the subject about which you asked, for example, 'This is a man' or 'This is wood'. And if you ask and doubt 'What is a man?', your doubt will come to an end as soon as the reply is made clear to you in the form of a proposition, such as 'A man is a rational animal'.

And so it is clear that the question 'What is it?' asks for a proposition affirming a predicate of a subject. And this is also clear on the basis of a similar case. For if I ask, 'What is B like?' [*quale est B?*], I ask for a predicate from the genus of quality [*quale*], predicated of the subject B, determining for me what it is like, such as 'white', or 'hot'. And the case would be similar if I asked 'How much is B?' [*quantum est B?*] or 'Where [is B]?' [*ubi?*]. And so then, since the category of substance is the term 'what' [*quid*] or 'something' [*aliquid*],[367] if I ask: 'What is B?', I ask for a predicate that determines for me what B is, as for example, 'is an animal' or 'plant' or 'man' or 'rational animal' or something like that. And the questioning will not come to an end until I clearly know this.

There is no problem, either, in what might be objected, namely, that one asks for the definition of man when one asks: 'What is a man?' For this I concede. But it is asked concerning a subject, namely, concerning the subject 'man'. Therefore, although you might have in mind the expression 'rational, mortal animal', nevertheless, logically speaking, you would not know what a man is, nor would you know that a man is a rational, mortal animal [unless you knew the whole proposition]. And, logically speaking, although what a man is you would know, still, you would not know what a man is, as has been pointed out in connection with the diversity of such locutions.[368]

Likewise, I say that in the question 'For what reason is it [thus and so]?' I ask for a predicate concerning a subject. As when I ask for what reason the moon is eclipsed, I concede that I do not ask whether the predicate 'eclipsed' applies to the moon, but, knowing this beforehand, I ask for a causal predi-

367. *Cum praedicamentum substantiae sit ille terminus 'quid' vel 'aliquid'.* Not that in accordance with his doctrine in the treatise on categories (cf. 3.1.8) Buridan does not hesitate to identify the category of substance with a term.

368. The difference, of course, is that between composite and divided, or *de dicto* and *de re* formulations. For if you have in mind only the definition, not predicated of the subject, then that which is predicated of the subject is known by you, buy you may not know that it is predicated of that subject. See 4.5.3; *Sophismata,* chap. 4, pt. 3

cate, namely, the predicate 'eclipsed because of the interposition of the earth'. And I will not cease to doubt until I know that that predicate applies to the moon.

8.12.2 On the various species of knowable questions

From what has been said it follows that every question that is scientifically demonstrable by us should receive some determinate response, which is a proposition knowable either as a demonstrative and indemonstrable principle, or as a conclusion knowable by means of a demonstration or demonstrations.

To the conclusion that is inferred in the present second part, the clause 'which is scientifically demonstrable by us' is added, because there are questions that are not scientifically demonstrable by us—such as whether all the stars together [*collective*] are even or odd or 'How many species of animals (or plants) are there?'—to which no determinate answer should be assigned.[369] For if I were to respond that I do not know or that we cannot know this, I would not settle the question, since this has not been asked. But if the question is scientifically demonstrable by us, then it is clear from the preceding part that the determinate response should be a proposition and one that indeed has to be knowable, given that it is scientifically demonstrable. In fact, any knowable proposition is either knowable by demonstration or by reason of the natural inclination of the intellect toward truth, although preceded by the senses, memory, and experience. And this constitutes what it is to be knowable as a demonstrative and indemonstrable principle.

8.12.3 On the question 'What is it?'

(1) The question 'What is it?' [*quid est*] presupposes that the thing of which it is asked is something [*esse quid sive aliquid*], just as the question

369. At least, this is so given Buridan's strict standards of scientific demonstration. For of course there may well be a determinate number of stars or species; nevertheless, that number may never be knowable by means of such a strict scientific demonstration that would yield an enduring (in Buridan's sense of enduring) conclusion.

> asking 'How much is it?' [*quantum*], or 'What is it like? [*quale*], or 'Where is it?' [*ubi*] presupposes that the thing is of some quantity [*aliquantum*], or of some quality [*aliquale*], or somewhere [*alicubi*]. (2) Therefore, such questions do not ask about the most general genera. (3) But they ask for the most specific or subordinate species of the categories. For if one asks: 'What is this?', the question concerns the most specific species. (4) But if one asks what it is with respect to the species or a definable term, the question concerns its definition; for the questioning would not come to an end until the definition is provided.

The third part shows in particular what the question 'What is it?' asks. It has four sections. (1) The first shows what the question 'What is it?' presupposes; and this whole point has been stated in the fourth part of the second chapter.[370]

(2) The second section infers that the questions 'What is it?' or 'What is it like?' or 'How much is it?' etc. do not ask about the most general genera of their subjects, namely, [whether] the terms 'something', 'of some quality', or 'of some quantity' [apply to them], for one cannot properly raise a query about what is already presupposed and recognized as true [*praecognoscitur*].

(3) Therefore, the third section infers that these questions ask for the species contained under those most general genera; for 'What is it like?' asks for a species in the category of quality, and 'How much is it?' asks for a species in the category of quantity, etc. And so also the question 'What is it?' asks for a species in the category of substance or for the definition of a species in the category of substance. This is why in the second part of the fourth chapter it was said that, in the strictest sense, if it is asked about [a suppositum of] a connotative accidental term what it is,[371] then only a substantial predicate is asked for; and for this reason, these terms do not have quidditative definitions in the strict sense.[372] Since, however, according to the common manner of speaking they are conceded to have quidditative definitions, it is conceded that when this question is raised in terms of them, then it asks for their definitions.

And this section adds further that if one simply asks 'What is this?', then what is strictly asked for is the most specific species or the definition of the subject. For although one may correctly respond with the genus, nevertheless this does not perfectly satisfy the person asking. For when one knows that this is an animal or a stone, there will still be a lack of knowledge concerning the question 'What is it?', e.g., what animal it is, or what stone it is, namely,

370. See 8.2.4.

371. If X is a connotative accidental term, then the question 'What is an X?' asks for a quidditative predicate of an X, i.e., it asks for a quidditative predicate of a suppositum of X.

372. See 8.2.4 (5).

whether it is a man, or a donkey, or some other animal, or whether it is marble, or a magnet, or some other stone. But if one knows that it is a donkey or that it is marble, then one would no longer ask what donkey or what marble it is, at least not as a doctrinal question, for that [type of question] does not descend to singulars, as was pointed out earlier.

(4) The fourth section states that the question 'What is it?' concerns a definable term, for it asks for its definition, as when I ask 'What is a man?' I do not ask, with respect to man, for the most general predicate ['man' can have, namely,] 'something', but I presuppose it, as was said earlier. Nor do I ask about [the predicability of] the most specific species of itself, as for instance about [the predicability of] 'man' of 'man', since, assuming that a man is something, there is no doubt that a man is a man.[373] And the same goes for the other cases. For if I know that a triangle is something, then I do not doubt that a triangle is a triangle. But neither do I ask for an accidental predicate, namely, one that signifies or connotes something else in relation to men, which the term 'man' neither signifies nor connotes, for this is what the questions involving the other categories ask for, as for example, 'What is a man like?' or 'How big is a man?' or 'Where is a man?' Therefore, [the question 'What is a man?'] asks for some other quidditative predicate of man in between the most general [term] and that most specific [term] that the question is about. And that [quidditative predicate] is [inferior to] the most general term 'something' or 'substance', namely, a genus of 'man' such as 'animal' or 'body'.[374]

But still, it does not suffice to be given [only] that genus in reply to such a query. For the queries of the person asking the question 'What is a man?' will not come to an end if he gets the answer that a man is an animal, because obviously a donkey is also an animal, as is a horse or a fish. Therefore, the quidditative question still queries what [*quod*] animal a man is, or what kind

373. The assumption of *Homo est aliquid* is needed because of the existential import of *Homo est homo;* for if no man is something, i.e., if nothing is (a) man, then it is not true that (a) man is (a) man, according to Buridan.

374. I have translated this sentence on the basis of a conjectural emendation (replacing *sensus* with *inferius)* of the first version of de Rijk's critical text: "Et illud est sensus [inferius? —my conjecture] huius generalissimi 'aliquid' vel 'substantia', scilicet genus hominis, ut animal vel corpus vel huiusmodi." In the new version we have the following: "Et vel est superius huius generalissimi 'aliquid' vel 'substantia', [Nempe terminus transcendens 'ens'—de Rijk's note] vel genus hominis, ut animal vel corpus vel huiusmodi"—"And it is either superior to this most general term [namely, it is the transcendental term 'being'—de Rijk's note], or a genus of the term 'man', such as 'animal' or 'body', or something of that sort." But in the doctrinal context of this sentence, where Buridan obviously wants to state that such a question concerns generic terms in between the most general and the most specific ones, this does not seem correct.

of [*quale*] animal a man is, where the 'what kind' question is not asked with regard to some accidental quality but with regard to some essential quality [*non quale sit qualitate accidentali sed essentiali*], and this merely amounts to looking for the essential difference restricting the genus 'animal' without any connotation extrinsic to the species 'man', until one arrives at a predicate that applies to nothing else but that will be convertible with 'man', and that is then the quidditative definition of man.

And it is necessary that someone who is asking strictly 'What is man?' should ask for the definition of 'man' with respect to man. We should also realize that sometimes, when we already know the most general genus or some other genus of a species as presupposed [*ex suppositione*], we are no longer asking for another genus by means of the question 'What is it?', but it suffices for us to ask for and obtain differences restricting the genus we have, until the whole is exclusively applicable [*proprium*] to what we are asking about. For example, when I ask: 'What is an animal?', and from the presupposition I know that it is something, it is sufficient to get to what kind of something it is [*quale quid est*] by means of substantial differences, for example, that it is a corporeal, animate, sensitive something. And this again is the definition of 'animal', with respect to which we raised the question 'What is it?'

8.12.4 On settling the question 'What is it?'

(1) But since in the question 'What is it?' the definition asked for [*definitio quaesita*][375] is not expressed, it is more difficult to settle the question [*terminare quaestionem*].[376] For one first has to find or assume the [constitutive] parts of the definition, namely, first the genus and then the difference. (2) And then one has to provide the definition of each of the parts in the manner of simple inherence [*per modum simplicis inhaerentiae*], as in 'A man is an animal', 'A man is rational', and 'A man is mortal'. (3) Next,

375. I have taken this reading from the apparatus. The critical text has *definitio quaesitiva,* which might be translated as 'interrogative definition,' but that does not seem to make good sense.

376. The point Buridan intends to make is that finding the answer to such a question is more difficult than to answer a yes-no question (such as a *si est* or a *quia est* question, cf. 8.12.6 below) in which the possible alternatives are explicitly expressed, such that we just need to find the right one. But in a 'What is it?' question, the possible alternatives are not expressed, so that we first have to find even those. The case is similar with a *propter quid* question, as is stated by Buridan in 8.12.5 (3) below.

> those parts have to be arranged in the appropriate order in an expression, as in 'rational, mortal animal'. (4) Finally, if we wish to know whether the predicate thus found and arranged indicates perfectly what was asked about insofar as it is a man, one has to know that it is the definition of man, that is to say, that it contains a genus of that which was asked about, along with all the essential differences appropriately arranged, which restrict the genus to this species until the whole is convertible with the species, so that that predicate does not connote anything beyond this. (5) And it is clear that in order to know this one often has to use various divisions and demonstrations.[377]

The fourth part shows in particular how the question 'What is it?' is settled. And it contains five sections. (1) The first shows that one first has to find or assume the parts of the definition: to assume, if they are manifest, and to find, if they are not manifest. For the first genus is manifest and presupposed, as has been said. But the intermediate genera and differences are sometimes not so manifest, and for this reason one has to seek and find them.

(2)–(4) The second section, as well as the third and the fourth, quite clearly show what items are further required after finding the above so that the question 'What is it?' can perfectly be settled.

(5) The fifth section finally states that in order to find and [come to] know these things, one has to use various divisions and demonstrations.

But now we should see in what cases and how these should be used. Therefore, given that one has assumed the first genus or some other genus that manifestly inheres in the species of that about which the question 'What is it?' is asked, one may sometimes doubt whether that is a true genus; and then one should inquire into this by some method that is given or can be given concerning the genus so as to solve the problems concerning the genus. For that problem may be settled by dialectical considerations—which produce an opinion about it and not knowledge—or by means of metaphysical demonstrations, which truly satisfy the query and produce knowledge. Knowing therefore that it is a true genus, one has to go on to divide it by a perfect division, namely, one that is exhaustive and nonoverlapping, by means of its primary essential differences. And one of those differences has to inhere in the species that the question concerns. And if it is clear which one of them inheres in it, that one will have to be added to the genus. If, however, this is not obvious, then this has to be known by means of a demonstration, either

377. I have taken *demonstrationibus* (demonstrations) from the apparatus (the critical text has *definitionibus* [definitions]). The same goes for the text of the corresponding passage in the commentary below, where the discussion makes it clear that this should be the correct reading.

an affirmative one, namely, one that concludes that this inheres, or a negative one, concluding that the other does not inhere, from which, by virtue of the division, it will be known that this one inheres.

Once one knows, therefore, that it inheres in the species, it has to be added to the genus. After this, one has to see whether the aggregate of genus and difference is convertible with the species in question. And if so, one should cease from trying to find further differences. But if it is not convertible, then it should be divided just as the first genus was divided, and so on, until one arrives at a convertible [expression]. And whether [the expression] found is convertible will be known either by means of a probable topical argument or by means of a metaphysical demonstration. But this genus and these differences have to be arranged in an appropriate order, as is stated in bk. 7 of the *Metaphysics*.[378] And this arrangement is taken from the divisions of genera in terms of their differences. For the difference taken from the first division of the genus is to be added to the genus immediately, and then the difference found in the second division, and so forth.

For the first division of the genus—if the divisions are carried out in terms of essential differences—is that which is the closest to the genus, which is exhaustive and nonoverlapping and whose members taken disjunctively comprise the whole extension [*tota communitas*] of the genus and do not exceed it. But the second division does not cover the whole extension of the genus, but it is proper to and convertible with the aggregate of genus and the first difference, as is the first division with the genus, and so forth. And Aristotle clearly indicates in bk. 7 of the *Metaphysics* and in bk. 2 of the *Posterior Analytics* that this order is to be observed.[379]

We should therefore finally note that in this process of inquiring about the definition of a definitum, every intervening proposition should be known demonstratively, either as a demonstrated principle or as a demonstrative but indemonstrable principle,[380] if the question 'What is it?' is to be perfectly settled and that which is asked by it is to be perfectly known. But Aristotle inquires further in a long discussion whether the same thing is known demonstratively and definitively and what it is that is known demonstratively and what it is that is known definitively.[381]

378. Aristotle, *Metaphysics* VII.10.1034b20–11, 1037a21.

379. Ibid., VII.10.1034b20 et seq.; *Posterior Analytics* II.13.96b30–32.

380. I have based this translation on the critical apparatus, reading: "Est ergo ultimate notandum quod omnis propositio in tali processu inquisitivo definitionis de definito interveniens debet sciri demonstrative: aut per modum principii demonstrati aut per modum principii demonstrativi et indemonstrabilis," etc.

381. Aristotle, *Posterior Analytics* II.3.90a35–8, 93b20.

And I briefly respond that something is known demonstratively insofar as it is a demonstrated conclusion, and something is known definitively insofar as it is a defined term, and these never are the same. Other things are said to be known demonstratively, insofar as they are the things signified by the demonstrated conclusion and by its terms, whereas others are said to be known definitively insofar as they are the things signified by a defined term and by its definition. And in this way, they may well be the same. For a triangle and that a triangle has three angles equal to two right angles are the same, and that the moon is eclipsed, when it is eclipsed, is the same as the eclipse of the moon.[382]

8.12.5 On settling the question 'For what reason is it?'

(1) The way to settle a question *propter quid* is by means of a demonstration *propter quid,* as all commonly concede. And this way may already be somewhat discernible from what has been said. (2) For it is first clear that the question *propter quid* presupposes a proposition to the effect that the predicate truly inheres in the subject, and what is asked for is the cause of the inherence. For if I ask 'For what reason [*propter quid*] is the moon eclipsed?', I assume that the moon is eclipsed and I ask for the reason why this happens. (3) But this cause is to be sought in this demonstration in this way because one should look for a causal term that signifies the cause and that is to be added to the predicate of the proposition presupposed, thus rendering the proposition a causal one, which, since it is doubtful, becomes a demonstrable question. (4) And to demonstrate it one has to find a middle term to which the predicate of that proposition is shown to apply by the major proposition and which is shown to apply to the subject of the same conclusion by the minor; for this is how the conclusion is inferred in the first figure, which is the only one in which *propter quid* demonstrations in the strict sense can be found. (5) But if it is not known whether the cause being sought exists, this will be demonstrated from what is posterior [*a posteriori*] by means of an effect known to us. And all this is quite clear from the preceding.

382. See 4.3.2; *Sophismata,* chap. 1, Fifth sophism.

The fifth part, which states the way of settling a question *propter quid,* can have five sections. (1) The first of these, according to which the question is settled and what it asks about is known by means of a demonstration *propter quid,* is commonly accepted.

(2) The second shows what is asked about and what is presupposed in the question *propter quid.* And this is quite clear, whether the proposition concerned by the question has 'is' as an absolute predicate [*de est secundo adiacente*] or as a copula [*de est tertio adiacente*] or whether it has 'comes to be', 'was', 'will be' or 'can be' etc., or again, whether the proposition is universal and necessary, as in the cases of doctrinal and enduring knowledge,[383] or singular and contingent, as is often the case in the arts and prudence. For this entire part, and each of its sections, is to be interpreted as embracing all of these, such as when I ask, 'For what reason is there (or was there) an eclipse?', or if I ask, 'For what reason is (or was, or will be) Socrates now in (or going to) the marketplace?', I then presuppose that he is (or was or will be), etc.

(3) The third section shows how a cause is to be sought. For it is clear that it, or the term appropriately signifying it, is not expressed in the question *propter quid,* just as the quidditative definition is not expressed in the question *quid est.* For example, when one asks: 'For what reason is the moon eclipsed?', the interposition of earth is not expressed [in this question]. Therefore, it is to be sought and found. And when that term is found, it should be appended to the proposition. And thus we again have a demonstrable question. For then we should ask whether the moon is eclipsed because of the interposition of the earth.

(4) And then, as is stated in the fourth section, we should find the middle term to demonstrate that this is so, and in that case the question will be decided, or to demonstrate that this is not so, and in that case we should abandon this cause or this causal term and find another. For it often happens that it is difficult to find the causal term. And so it is necessary to list the apparent or likely causes or causal terms, to append them to the proposition about which the question is asked, and to consider demonstratively with each such appended item whether the resulting causal proposition is true. For example, some people held that the moon has its own light and that its light is extinguished during an eclipse. Others believed that one half of it is bright and the other lacks light and it is eclipsed to us because it turns its dark side to us. Others believed that it does not have its own light but is illuminated by the sun, and it is eclipsed when some obstacle impedes it from being illuminated

383. Alternatively: 'in the case of doctrinal and enduring sciences'—*in scientiis doctrinalibus et mansivis.*

by the sun. These opinions are listed by Aristotle as examples in bk. 2 of the *Posterior Analytics*.[384] Therefore, one has to consider demonstratively that [the eclipse] does not happen because of such an extinction or turning but because of the interposition of an obstacle, namely, the earth.

(5) But whenever we have no opinion about the cause or the causal term, or, given that we do have one, we do not have any justification of it [*nulla habetur opinio vel nulla, {una} habita, invenitur notitia*], even then, as is stated by the fifth section, we have to find such a cause on the basis of effects and circumstances, as well as see whether it agrees with the phenomena. We must also demonstrate the proposition formed on this basis and see whether it is a necessary cause of this effect or contingent, i.e., such that an effect of this kind could be or come forth from another cause as well, or whether it is proper or common. And if it is found that it is proper and necessary, then the conclusion will be known strictly and demonstratively, and the demonstration will be *propter quid* in the strict sense. But if it is contingent, or common, then it will still be a demonstration, and not one that is *propter quid* in the strict sense but in the general sense [*in communi*].

8.12.6 On the questions 'How is it?' and 'Is it?'

> But as far as the questions *quia est* and *si est* are concerned, the knowable proposition to be demonstrated is expressed in the question. And what is sought is the manifestation of the truth about it by means of an appropriate middle term. And for finding this, no matter what sort the question to be demonstrated may be, whether universal or particular, and whether affirmative or negative, the art is provided in bk. 1 of the *Prior Analytics.*

The sixth and final part of this chapter and of this whole treatise deals briefly with the questions *quia est* and *si est,* for they have already been sufficiently discussed in this treatise and in the treatise on syllogisms, apart from the fact that some people have had doubts concerning the question *si est* and have said that it is impossible to prove that A is, or that A is not, or that God is [i.e., that God exists], or that there is no vacuum. For if you were to demonstrate that God is, let the middle term be B, and then the syllogism will proceed in the first figure thus: 'Every B is; God is B; therefore, God is'. But then it would at once be obvious that there is question-begging [*petitio principii*] going on with respect to the minor proposition, for a proposition with

384. Aristotle, *Posterior Analytics* II.2.90a3–19.

'is' as the copula [*de 'est' tertio adiacente*] presupposes one with 'is' as an absolute predicate [*de 'est' secundo adiacente*]; therefore, nobody who believes that God is B believes that God is not or doubts that God is. And the other figures do not prove [anything] unless they can be reduced to the first. Likewise, if you wish to demonstrate that there is no vacuum, then let the middle term be again B, and then the syllogism in the first figure will proceed thus: 'No B is; [any] vacuum is B; therefore, [any] vacuum is not'. But then it is at once obvious that if the conclusion is true, then the minor, '[Any] vacuum is B', is false, for it is affirmative, and the subject supposits for nothing; therefore, that syllogism is not a demonstration, for it does not proceed from true premises.

There are two answers to this, if we assume what is commonly assumed by all, since they claim that a proposition with 'is' as the copula is demonstrable. The first answer is that if 'is' as an absolute predicate cannot be demonstrated by a categorical demonstration, nevertheless, it could still be proved by a hypothetical demonstration, in the following manner: 'If some cause is first and uncaused, then God is; but some cause is first and uncaused; therefore, God is'. The major is known on the basis of the nominal definition [of 'God'], positing that the term 'God' would signify entirely the same as the expression 'first and uncaused cause'. And the minor is posited as having been demonstrated or as demonstrable, for it has 'is' as the copula. But if it has 'is' as the copula, then it follows that the conclusion will be made manifest and known, whereas earlier it was doubtful.

Likewise, I would argue concerning the vacuum as follows: "If every place is filled with a body or bodies, then there is no vacuum (this is obvious from the nominal definition [*quid nominis*] of the name 'vacuum'); but every place is filled with a body or bodies (assuming that this is evidently demonstrable and is to be demonstrated)"; this entails the conclusion 'therefore, there is no vacuum', and this will be made known by this [hypothetical] syllogism.

The second answer is that one power [*potestas*] of syllogisms is that they can conclude to several conclusions. For whatever follows from the consequent follows from the antecedent. Let us posit, therefore, that there are two propositions evidently entailing each other, one with 'is' as an absolute predicate and the other with 'is' as the copula, both of which are doubtful. Then, by whatever known premises the one with 'is' as the copula would be demonstratively concluded, by the same premises the other with 'is' as an absolute predicate could be concluded and known. For example, by whatever known premises you will produce the knowledge that a mover is eternal, by the same premises you will produce the knowledge that an eternal mover is. And whatever premises will prove that no place is empty will also demonstrate that no empty place is.

Sophismata

Chapter 1: On the signification of terms and propositions

At the beginning of my lectures on the survey [*summa*] of logic, I said that the ninth and final treatise would be about the practice of sophisms, namely, about their formulations and solutions. Further, I may recapitulate in it some points discussed in the earlier treatises, and sometimes I will clarify them somewhat more, to the extent that I consider fitting for the solution of sophisms.

I accordingly wish to divide this treatise so that I deal first with propositions about actuality [*de inesse*] and second with modal propositions; and, although only those about the present [*de praesenti*] are, strictly speaking, about actuality—for those about the past [*de praeterito*] or about the future [*de futuro*] are not, strictly speaking, about actuality but about future actuality [*de fore*] or past actuality [*fuisse*]—yet, broadly speaking, I use here the term [propositions] 'about actuality' to cover all those that are usually not called modal [propositions].[1]

Further, in the first of those parts, I deal first with propositions with absolute terms and second with propositions with relative terms.

Again, in the first of those parts, I will consider first absolutely categorical propositions, second, absolutely hypothetical ones, third, categorical ones having a hypothetical subject or predicate, and fourth, ones that are categorical in [their form of] utterance but need to be analyzed in terms of hypothetical ones, as in the cases of exceptive, exclusive, and reduplicative [propositions], and in many others where verbs such as 'begins', 'ceases', 'becomes', 'differs', and several other syncategorematic words are concerned.

Again, in the first of those parts I deal first with propositions having simple subjects and predicates and second with those that have complex subjects and predicates, whether these consist of several [words] in the nominative case or of [words] in the nominative and the oblique cases.

Again, in the first of those parts I deal first with the grounding of some common principles that have to be assumed concerning the aforementioned propositions, and second with the syncategorematic words that usually figure in the aforementioned simple categorical [propositions].

1. Of course, Buridan is describing here what in modern philosophy we would call assertoric propositions, as opposed to modal ones. But in order to preserve in the translation Buridan's original concern with the different temporal connotations of tensed propositions, a concern that is not reflected in the modern terminology, I use the terminology already introduced in Treatises 1 and 5. See 1.3.4 n. 62.

Again, in the first of those parts, I deal first with the signification of terms and expressions, second with the causes of the truth and falsity of such propositions, third with supposition and appellation, as well as with the ampliation and restriction of supposition and appellation, fourth, with the fact that an utterance signifies by convention [*ad placitum*], and fifth with the measure according to which a proposition is said to be true or false.

Therefore, dealing with the signification of terms and propositions, we propound the following:

First sophism: Every spoken proposition is true

P.1 Proof: in whatever way a proposition signifies it has a correspondence in that respect in the thing signified; therefore, it is true.

P.1.1 The consequence seems to be true: for this is what seems to be the necessary and sufficient ground for the truth of a proposition.

P.1.2 Proof of the antecedent: every spoken proposition signifies a mental one similar to it or proportionally corresponding to it, in accordance with what is said in bk. 1 of *On Interpretation*, namely, that utterances are the marks, i.e., the signs of the affections that are in the soul.[2]

O.1 The opposite is conceded by everyone.

Second sophism: A horse is a donkey

P.1 We assume the case that all horses and donkeys are totally annihilated, so that nothing is a horse and nothing is a donkey. Then the sophism is proved, because its contradictory is false, namely, 'No horse is a donkey'.

P.1.1 Proof: this is because the thing or things signified do not exist in the way signified by this proposition. For, given the assumption, nothing is a thing signified by the proposition, i.e., nothing is a horse or a donkey. But that which is absolutely nothing exists neither in this way nor in another way;

2. Aristotle, *On Interpretation* 1.16a 4–5.

therefore, it is not the case that in reality things are as was signified by the proposition; therefore it was not true; therefore, the sophism is true.[3]

O.1 The opposite is conceded.

Third sophism: God does not exist

P.1 Proof: howsoever this proposition signifies, so is [everything it signifies];[4] therefore, [the proposition] is true.

P.1.1 Proof of the antecedent: the above proposition either precisely signifies a mental proposition and its terms, and these all are in the mind and correspond to that proposition, whence in whatever way this proposition signifies so is [everything it signifies], or it signifies something else outside [*ad extra*];[5] but in this latter case I ask whether beyond the soul's concept it precisely signifies God, and then, since He exists, there will still be a correspondence in reality to everything signified by this proposition, and so it will be true. Or again, it signifies yet something more, namely, something beyond the concepts of the soul and apart from God. And if you say so, then you cannot say what that [further thing] is, except [that it is] *that God does not exist* [*Deum non esse*],[6] and then I would conclude that *that God does not exist* is signified by the proposition 'God does not exist'. And therefore I would conclude further that *that God does not exist* exists, for the proposition "*That God does not exist* is signified [by the proposition 'God does not exist']" is affirmative; therefore, it is not true unless its subject supposits for something, and so *that God does not exist* exists. And this is what is signified by the expression 'God does not

3. See the Fourth conclusion below.

4. *Qualitercumque propositio significat, ita est.* Alternatively, but sticking even less to the syntax of the original: 'In whatever manner the proposition signifies [anything it signifies], so is [everything it signifies]'. In what follows, I will use this perhaps less awkward formulation. Also, where the context will demand it, lest we think that Buridan would attribute the ways in which a proposition signifies to the ways in which things are, I will use the formulation: 'in whatever way the proposition signifies things to be, so things are', or some stylistic variant of this. But whenever Buridan refers back to this "correspondence-rule" as the general condition of truth for all sorts of propositions, we should keep in mind that it is always this general formula that he has in mind. See n. 50 below.

5. That is, in extramental reality.

6. For the significance of the use of italics in this construction see notes 15 and 16 below.

exist' and nothing else, except God and those [concepts] that are in the mind, and these all exist; therefore, the thesis follows, namely, that in whatever way it signifies so is [everything it signifies]; therefore, the proposition is true.

P.2 Again, this is false: 'Every God exists'; therefore, this is true: 'God does not exist'.

P.2.1 The consequence holds by virtue of the locus of contradictories.

P.2.2 I prove the antecedent: for the proposition 'God exists' signifies more than the term 'God' does—otherwise it would be just as true to say: 'God' as it is true to say 'God exists'. And this is similar to the case in which the expression 'A horse exists' signifies more than the word 'horse', for it is never false to say 'horse', even assuming that no horse existed, but it would then be false to say: 'A horse exists', and this would not be the case, unless it signified something more. We should concede, therefore, that the expression 'Every God exists' signifies more than does 'God';[7] however, there is nothing more in reality corresponding to that proposition than to the term—for even when absolutely nothing existed besides God, God still existed[8]—therefore, there is no correspondence in reality to the total signification of the proposition 'Every God is', and so it is false; therefore, this is true: 'God does not exist'.

O.1 The opposite is conceded by everyone.

Fourth sophism: The name 'chimera' signifies nothing

P.1 Proof: it does not signify something other than a chimera—at least on the basis of its principal signification—for we do not discuss the grammatical modes of signification here, but a chimera is nothing; therefore, 'chimera' signifies nothing.

P.1.1.1 I confirm the assumption, namely, that the name 'chimera' signifies nothing other than a chimera, by means of similarity [of cases, for] neither

7. What Buridan has said so far seems to prove only that 'God exists' signifies something more than the term 'God'. We may take it, however, that if this argument holds for 'God exists', then it should *a fortiori* hold for 'Every God exists'.

8. So, when only God existed, the significate of the term 'God' clearly existed. But the term does not signify anything else besides God. So, if the proposition signifies more than the term does, then, when only God exists, something signified by the proposition that is not signified by the term does not exist. But then, since not everything that is signified by the proposition exists, the proposition is false.

does 'man' signify [anything] other than man, nor does 'whiteness' [signify anything] other than whiteness, and so on for all other beings.

P.1.1.2 And it is confirmed again by induction: for it does not signify a donkey, nor a goat, nor whiteness, nor sweetness, and so on for all other beings.

P.1.1.3 Again, assuming that it would signify [something] other than a chimera, it would still follow that it signifies nothing: for nothing is other than a chimera, since a chimera is nothing. It follows, however, that if B is other than A, then both exist, namely, B and A, as is clear from bk. 10 of the *Metaphysics*.[9] For nothing is identical with or diverse from a non-being, and this is conceded by sophists.[10]

P.1.1.4 Furthermore, if the name 'chimera' signified something, then its signification would have correspondence in reality, and then 'A chimera is a chimera' would be true, which is not conceded.

P.1.2 Proof of the consequence: otherwise some same thing would correspond to the subject and the predicate of that proposition, yet an affirmative proposition is verified on account of the identity of the predicate with the subject—I mean the identity not of the utterances but of the thing corresponding to it in reality.

P.2 Again, if ['chimera'] signified something, then it should supposit for it, just as the term 'stone' supposits for a stone—because it signifies a stone—but the term 'chimera' does not supposit for something; therefore, it signifies nothing.

P.2.1 That it does not supposit for something is clear; for if it supposited for something, then this would be true: 'A chimera exists', and also this: 'A chimera is something'; but these are not conceded; therefore, the name 'chimera' signifies nothing.

O.1 The opposite is argued, for then it would not be an utterance any more significative than is 'bu' or 'ba', which is not conceded.

O.2 Again, every name is a conventionally significative utterance. This is not so merely because it can signify, for then also 'bu' and 'ba' would be conventionally significative utterances as are names and verbs, which is false. Therefore, every name is a conventionally significative utterance because it has been imposed to signify, and everything that is imposed to signify is imposed to signify something; and it signifies that which it was imposed to signify; therefore, every name signifies something, and the word 'chimera' is a name; therefore, etc.

9. Aristotle, *Metaphysics* X(I). 3.1054b18–22.

10. 'Sophists' in this context may well refer simply to professors of logic, who used sophistic exercises as an important teaching tool. For this (nonpejorative) use of the term see, e.g., St. Thomas Aquinas, 1SN d. 21, q. 1, a. 1a, ad 2; ST1 q. 31, a. 3, ad 3; ST1 q. 39, a. 5, ad 5.

It is true that some people, trying to evade [this difficulty] rather than seek out [*discernere*] the truth, have wanted to reply that the utterance 'chimera' does indeed signify, but it does not signify something, so that this does not follow: 'It signifies; therefore, it signifies something, or, something it signifies', just as many people say that this does not follow: 'A acts; therefore, A acts something'.[11] And others even say that 'chimera' signifies a chimera, but it does not follow that 'therefore, it signifies something'. The latter appears [to be true], because according to them this does not follow: 'He makes a house; therefore, he makes something'.[12]

Against these replies I argue as follows: first, 'to signify' is described as 'to establish an understanding of the thing';[13] therefore, an utterance is said to signify the thing the understanding of which it establishes for us. Therefore, if every signifying is an establishing of the understanding of a thing, then every signifying is the signifying of a thing; therefore it is the signifying of something, for 'thing' and 'something' are convertible.

Again, to signify is to be a sign—but 'sign' [*signum*] and 'designatum' [*signatum,* that thing of which the sign is the sign] are correlatives—therefore, 'chimera' is not a sign, nor, consequently, does it signify, unless something is its designatum, namely, something present, past, or future, or at least possible. This is so with every relative [term]: for nothing is a father, if nothing is, or was, or will be, or can be, a child, and the same goes for cause and caused, prior and posterior, and so on for the others. If, therefore, the name 'chimera' signifies, then it is a sign, and if it is a sign, then something is, or at least was, etc. [its] designatum, and this is what we say is signified by the name 'chimera'. And so Aristotle in bk. 4 of the *Metaphysics* says that everybody who wishes to dispute has to assume that a name signifies something and that it signifies determinately one or many;[14] therefore, [it has to signify] some thing or some things, for 'one' and 'being' are convertible, and so are 'many' and 'beings'.

11. *A agit; ergo agit aliquid.* The point is that the Latin *agit,* just the English 'act', in the relevant sense (i.e., in the sense of performing some action) is an intransitive verb, which does not require or even permit the addition of a grammatical object.

12. The reason for this claim is that 'house' is not in the category of substance, but in the category of position, so it does not fall under 'something' but rather under 'something arranged somehow'; whence the corresponding valid inference would be: 'He makes a house; therefore, he makes something arranged somehow', from which it indeed does not follow further that he makes something absolutely, i.e., that he brings a substance into being that did not exist before, just as someone who, say, rolls a lump of clay into a ball makes it round, yet he does not make it, absolutely speaking. See 3.6.1–2.

13. See Aristotle, *On Interpretation* 1.6b21–22.

14. Aristotle, *Metaphysics* IV(G).4.1006b7–11.

Fifth sophism: Complexly signifiables are chimeras

P.1 Proof: they exist; therefore, they are either substances or accidents, creator or creature, or chimeras; but they are neither substances, nor accidents, nor creator, nor creature; therefore, they are chimeras.

P.1.1.1 That complexly signifiables[15] exist is proved as follows: before there was anything but God, there were many complexly signifiables.

P.1.1.2 This in turn is proved thus: at that time a man did not run; therefore, it was the case that a man did not run. But it is obvious that *that this then was so* [or, *this-then-being-so, tunc ita esse*][16] was neither a man, nor an aggregate of a man and running, nor some proposition, for then none of these existed. Neither was this God, for *that this then was so* was contingent, and God is always necessary, and also because *that this was so* is signified by the proposition 'A man did not run', which does not signify God; therefore, *that this then was so* was a complexly signifiable, distinct from any of the aforementioned things or at least not identical with any of them. And the same could be said about [the fact] that then a horse did not walk and that a stone did not move, and so on, for an infinity of other cases; therefore, etc.

P.2 Again, this is true: 'Antichrist will exist'; therefore, it is so that Antichrist will exist, but *that it is so* [*illud ita esse*] is neither Antichrist, nor is it some other being, apart from some complexly signifiable, as is clear by induction. And if *that it is so* exists, then it has to be conceded that it [also] existed before God created anything: for it would at that time have been just as true

15. *Complexe significabilia.* However odd the adverbial form of the adjective 'complex' may sound in English, I could not translate this phrase as 'complex signifiables', as T. K. Scott did. For the adjective would determine *the thing that* can be signified and not *the mode in which* it can be signified; but the point Buridan is about to make is precisely that even the most simple thing, God, is signifiable in a complex manner, i.e., by means of a complex expression, a proposition, corresponding to a complex concept. For more on the problem of *complexe significabilia* and the problems related to translating their "names," i.e., the various forms of sentential nominalizations used to refer to what a proposition as a whole signifies, see the introduction. See n. 28 below.

16. In such and similar contexts I will italicize the "that-clause," purportedly referring to a *complexe significabile,* to facilitate its recognition as one complex term, which is considered as suppositing for whatever the corresponding proposition as a whole is taken to signify, or which, in any case, has some referring function related somehow to the semantic values of the corresponding proposition. As we shall see below, Buridan will opt for identifying the supposita of such a complex term in its significative use with the supposita of the subject of the corresponding proposition if the proposition is true, and with nothing if the proposition is false. But when such a complex term is taken materially, then according to Buridan it supposits for any corresponding particular spoken or written proposition .

to say that Antichrist will exist as it is now; therefore, that complexly signifiable then existed. And just as it was argued about Antichrist, so it could be argued about many others that will exist but do not yet exist.

P.3 Again, let us designate something creatable that God can create and let us call it B. Then this will be true: 'B can be created'; and this is also true: 'God can create B'. Therefore, it is so that B can be created; and *that it is so* [namely, *that B can be created*] is not God—since God cannot be created—nor is it B, nor anything inherent in B—for B does not yet exist; therefore, it remains that it is one complexly signifiable, and that it existed even before God created the world, for then it was possible for B to be created, just as it is now. And the same could be said about this, namely, *that God can create B.*

P.4 Again, if God creates B, then it is so, and thus *that God creates B* is, and it is not B itself (for B does not yet exist), nor is it God (for *that God creates B* is purely contingent and God is not contingent); therefore, *that God creates B* is one complexly signifiable distinct from the others, and the same could be said about the others.

P.5 Again, some people believe they argue very shrewdly as follows: *that Socrates loves God* is either Socrates loving God or it is some such complexly signifiable. If it is such a complexly signifiable, then I have what I set out to prove, for the same will have to be said about the other cases. But I [go on to] show that it is not Socrates loving God: for then it would be nothing but Socrates, and then, by the same token, *that Socrates hates God* would be Socrates and nothing else; whence, *that Socrates loves God* and *that he hates God* would be identical, and this is impossible, for the former is extremely good and commendable, whereas the latter is extremely bad and damnable.

O.1 The opposite is conceded by everyone, for chimeras do not exist. And it is also argued that there were no such complexly signifiables before there was anything besides God; for such would imply a contradiction, namely, that there is nothing besides God and that nevertheless there are complexly signifiables and they are other than God.

O.2 Again, they would have to be eternal, and we hold by faith that nothing is absolutely eternal except God.

O.3 Again, everything that exists is either God or a creature dependent on God, but those complexly signifiables were neither creatures—for they had existed before God created something—nor were they God, as they[17] say, and that is true, for they are several, say, ten, or many more, whereas God is one; therefore such complexly signifiables were absolutely nothing.

17. That is, the authors who endorse *complexe significabilia,* most notably, Gregory of Rimini. For more on this issue see the introduction.

O.4 Again, they were not accidents—for it would be impossible to determine what they were the accidents of and in what they inhered—nor were they substances, as is conceded by those who posit them; therefore, they were absolutely nothing.

Sixth sophism: Nobody lies

P.1 Proof: to lie [*mentire*] is to go against one's mind [*contra mentem ire*], i.e., to assert the contrary of what one has in mind. But this is impossible, because to every spoken proposition there must correspond a similar one in the mind. For one would not assert that which one did not understand; therefore, etc.

O.1 The opposite is obvious.

In order to deal with these sophisms we have to propound some points about the signification of propositions and terms.

First conclusion

And the first conclusion is that written letters signify utterances, spoken or utterable, but they do not signify other things outside the soul, such as donkeys or stones, except by the mediation of the signification of utterances.

This is clear, for teachers who teach children the alphabet teach them what those letters were imposed to signify, and they teach them only to pronounce them thus and so. And they teach them to utter the letter *b* differently from the letter *c,* and this is so only because those letters were imposed to signify diverse utterances.

So then let us assume that someone [who cannot read] has Latin as his mother tongue, just as we have French, and thus he will know very well the signification of the spoken expression *Homo currit* ['A man runs']. But if the expression corresponding to it is written, then although he will indeed see the writing, and the extension and the shape of the letters, he will still be completely ignorant of what that writing signifies, for he will not know what utterances those letters signify; therefore, those letters do not signify that a man runs, except by the mediation of [the fact] that they signify such utterances.

Second conclusion

The second conclusion is that significative utterances signify affections, i.e., concepts of the soul, and signify other things only by the mediation of the signification of the concepts.

This is clear, in the first place, because letters are related subordinately to utterances, and analogously, even as utterances are related to the intentions of the soul; but we said that letters signify utterances; therefore, etc.

Second, this is obvious because there are diverse significative utterances that are not synonymous but do have diverse significations, and that nevertheless, besides the [variety of] concepts, do not signify diverse things at all, but the same, and they supposit for them convertibly, as in the cases of 'being', 'one', 'non-identical', 'diverse', 'quantity', 'essence', etc.; therefore, these terms do not have such diverse significations on account of the diversity of external things, but only on account of the diverse concepts designated by those terms, by the mediation of which they signify other things.

And this is also obvious since authors commonly distinguish between equivocal and univocal names, on the ground that an equivocal name has several significata, and a univocal name does not, but [it has] several supposita.[18] And this is also why Aristotle says that an equivocal name calls for distinctions, but not a univocal name.[19] And these [points] are not true on account of the things signified outside [of the soul], but only on account of the concepts; therefore, those concepts are the significata of those names.

And it is entirely clear that it is these two conclusions that Aristotle intended in bk. 1 of *On Interpretation* and even more so in bk. 4 of the *Metaphysics*,[20] where he says that it has to be assumed, if someone wishes to dispute with someone else, that a name signifies some one thing, determinately, and that if [it signifies] more, as in the case of an equivocal name, it still does not [signify] an infinite [number of things], but a determinate [number of things], and all this can only be understood as applying to the intentions or concepts of the soul. For supposing, as Aristotle believed, that the world was from eternity even as it is now, then the term 'man' signifies an infinite number of men. And even without such a supposition the name 'continuum' or 'magnitude'

18. Of course, according to Buridan a univocal name also has several ultimate significata, which he identifies with their personal supposita; but he contrasts here equivocal and univocal names in terms of their immediate significata, i.e., the concepts to which they are subordinated.

19. Aristotle, *Categories* 1.1a5.

20. On *Interpretation* 2.16a19–16b5; *Metaphysics* IV.4.1006b7–11.

signifies an infinity, for there is an infinity of continua, since a continuum has an infinity of parts, each one of which is a continuum.

Third conclusion

The third conclusion is that by every concept something is conceived, though this need not be only one thing but can be several things together. For it would be absurd to say that someone understands, and yet he understands nothing; or that he sees, and yet he sees nothing. For this would run counter to the condition and signification of an active [i.e., transitive] verb that requires an accusative [i.e., a direct object] following it, since this signifies in the manner of an act passing over to the other term.

For this reason we should hold that these are false: 'I read and I read nothing', 'I see and I see nothing', 'I understand and I understand nothing';[21] so I believe that all such [propositions] are false and not possible by nature.[22] Nor is it a hindrance that some people say that someone who makes a house makes, yet makes nothing, for although he makes nothing as the terminus of his action, he nevertheless brings about something *in a subject,* and something does come to be *in a subject*—for he makes the timbers into a house, and the timbers become a house as a result of his action.[23] Thus it is clear that if some active verb is truly predicated of some subject, then the verb has to be truly predicated of the subject together with the accusative following it [i.e., together with its direct object] whereby the mode of signifying appropriate to the active verb is terminated.

21. Or 'I think and I think nothing'; the Latin *intelligo* conveys both senses.

22. The qualification 'not possible *by nature*' indicates that Buridan would find it possible to preserve the acts signified by these verbs by absolute divine power without their corresponding objects. See Buridan's analogous discussion of acts of knowledge in 8.4.4.

23. Again, the point of the objection is that the builder of the house does not make something, absolutely speaking. A house on this conception is only timbers arranged in such and such a way, and the builder does not make the timbers absolutely speaking, he only makes them arranged in such and such a way. Yet, as Buridan insists, this is making something with qualification, namely, in a subject, because it is making the timbers arranged in such and such a way, i.e., bringing this arrangement into actuality in the preexisting subject, the timbers. See 3.6.1–2.

Fourth conclusion

The fourth conclusion is that every significative utterance and signifying act also signifies something. And this should be conceded and proved in a fashion analogous to that exemplified in the previous conclusion. And this was also correctly contended in the second sophism; therefore, this [proof] should be referred to there.

Fifth conclusion

The fifth conclusion is that the name 'chimera' does not signify a chimera, provided that it is impossible for a chimera to exist. And so, too, the name 'vacuum' does not signify a vacuum if it is impossible for a vacuum to exist, as Aristotle believes.

This is proved, because nothing seems to prevent the following consequence from being valid: "The name 'chimera' signifies a chimera; therefore, a chimera is signified by the name 'chimera'." But "A chimera is signified by the name 'chimera'" is false, because it is an affirmative [proposition] and the subject, the name 'chimera', supposits for nothing, for nothing is a chimera. But this is a rule about which more will be said later, namely, that every affirmative proposition whose subject or predicate supposits for nothing is false. And thus we should conclude accordingly that the following [propositions] are false: 'A chimera is thinkable', 'A chimera is opinable', 'A chimera is a chimera', 'A chimera is a non-being', and so on for other cases.

Thus there remains the question: What does the name 'chimera' signify, since it signifies something, as has been said, and yet it does not signify a chimera? To this one can first evasively reply that it signifies some concept in accordance with which the name 'chimera' was imposed to signify. But we should realize that this response does not suffice, for I am not inquiring any longer about the spoken utterance 'chimera' but about the mental name, i.e., about the concept in accordance with which the utterance 'chimera' is imposed to signify. I ask, therefore, what is conceived by that concept? For it has been said that something is conceived, but not a chimera—given that it has been asserted that all propositions such as the following are false: 'A chimera is signified', 'A chimera is thought of', 'A chimera is opined', etc. What, then, is conceived by that concept?

Sixth conclusion

To this [question], therefore, we have to respond by putting forth the sixth conclusion, namely, that a simple concept, if it becomes the subject or predicate of a mental proposition, supposits for the thing itself that is thereby conceived. For nothing prevents this, except perhaps in two cases. The first is when the thing is conceived as pertaining [*adiacens*] to some other, as would be the case with the concept whence the name 'white' is taken; for it could be said that by this concept whiteness is conceived, yet it does not supposit for whiteness, but for the subject to which the whiteness pertains—for it is understood as pertaining to the subject. But the concept corresponding to the name 'whiteness' supposits for whiteness, for by that concept whiteness is conceived, and not as though it pertains to something. The other case in which a simple concept would not supposit for the thing conceived would be when that thing existed and is destroyed, or does not yet exist, but will or can exist. And then, if the copula of the proposition does not accord with this but "draws" [supposition] toward some other time, then that concept does not supposit for that thing or for some thing. For example, in the mental proposition corresponding to the expression 'Antichrist exists', although the concept that is the subject is the concept of Antichrist, yet it does not supposit for Antichrist, for the [implicit] present tense copula prevents supposition for nonpresent things; therefore, that concept supposits for nothing. But if the mental proposition happened to be that Antichrist will be evil, then the concept of Antichrist would supposit for Antichrist. And there does not appear to me to be some other reason why a simple concept of some thing that is made to be the subject or the predicate of a mental proposition should not supposit for the thing that is conceived by it, and this I assume [or lay down] to be true.

But with a complex concept the case is different. For if it is complex in the manner of a determination applied to a determinable, as with the concept corresponding to the expression 'white man', then if the mental proposition were formed to the effect that a white man runs, then, although by means of the concept of man every man is conceived indifferently, still, that concept would not supposit for all men but only for the white ones, for it is restricted by the concept of white added to it, nor does the concept of white supposit for all white things, but rather it is restricted by the concept of man to supposit only for white things that are men. And therefore I conclude that, although every simple concept supposits for every thing that is conceived by it, except in the two aforementioned cases, still, this is not so where a complex concept is concerned, for the concept corresponding to the expression 'white man' supposits neither for every man nor for every white thing, even though every man

is conceived by it, on account of the concept of man, and every white thing, on account of the concept of white.

Seventh conclusion

The seventh conclusion, therefore, is that not every complex concept that is the subject or predicate of a mental proposition supposits for everything that it signifies, the two cases excepted above still notwithstanding.

Eighth conclusion

The eighth conclusion follows, namely, that some complex concept that is made the subject or the predicate of a mental proposition supposits for nothing, even though many things are conceived by means of it.

This is clarified as follows: just as in speech I can form the proposition 'A risible donkey runs', so I can form the corresponding mental proposition in my mind. For I can combine the concept of donkey with the concept of risible simultaneously as determination and determinable and constitute one subject from them with respect to the concept from which the verb 'runs' is taken. Then, by means of that complex concept, consisting of the concept of donkey and the concept of risible, I conceive of donkeys, by means of the concept of donkey, and risible things, namely, men, by means of the concept of risible; therefore, by that concept I conceive many things, namely, risible things and donkeys. Still, that complex concept supposits for nothing, for the concept of the risible prevents it from suppositing for things other than risible things, wherefore it cannot supposit for donkeys; and the concept of donkey prevents it from suppositing for things other than donkeys, whence it cannot supposit for risible things. And thus nothing remains for which it could supposit, just as in the previous conclusion it was said that in the proposition 'A white man runs', the subject 'white man' does not supposit for every man, nor for every white thing, for the term 'white' prevents it from suppositing for things other than white things, and the term 'man', conversely, prevents it from suppositing for things other than men.

Furthermore, we should note that, although an utterance immediately sig-

nifies a concept, nevertheless, it is by the mediation of the concept that the utterance is imposed to signify things that are conceived by means of the concept. Therefore, the word 'donkey' is imposed to signify by the mediation of the concept of donkey—[for] it signifies donkeys, which are conceived by means of that concept—and the utterance 'risible', imposed to signify by means of the concept of risible, signifies risible things, which are conceived by means of that concept. Therefore, all donkeys and all risible things are signified by the complex utterance 'risible donkey'.

Furthermore, with respect to supposition we should note that a spoken term, if it is taken significatively and not materially in a proposition, does not supposit for itself, nor for the concept that it immediately signifies, but it supposits for the same things as those for which the concept corresponding to it supposits, namely, for the things conceived by that concept. And in the same way, even a written term, if it does not supposit materially, supposits neither for itself, nor for the utterance that it immediately signifies, nor for the concept that it signifies by the mediation of the utterance, but rather for the things for which that concept would supposit in a mental proposition, so that everything in utterance or in writing, if taken not materially but significatively, is to be related to the supposition of the concepts in mental propositions.

Ninth conclusion

Therefore, we should conclude to the ninth conclusion, namely, that an utterance or an inscription subordinated to an incomplex concept taken significatively supposits for the things it ultimately signifies, namely, for the things conceived by that concept, unless it is prevented from doing so in the two cases excepted above. This is clear by the sixth conclusion and by what has just been said.

Again, not every complex spoken or written term supposits for all of its ultimate significata, should it become the subject of a proposition, as in the spoken proposition 'A white man runs'. And this is also clear on the basis of the seventh conclusion: for all men are signified by the utterance 'white man' because of the term 'man', and all white things because of the term 'white', yet, the term 'white man' does not supposit for all men, nor for all white things.

Again, some complex spoken or written term supposits for nothing, should it become the subject of a proposition, e.g., the term 'risible donkey'. This is clear by the eighth conclusion and what has just been said.

So the ninth conclusion has three parts, as is evident. And it can be inferred as a corollary that a determination added to a determinable detracts or excludes nothing from its signification, but it does restrict or completely eliminate its supposition. For example, if I say: 'A risible donkey runs', it is not to be assumed that those terms thereby become nonsignificative but rather that they become nonsuppositing, as has been said.

Tenth conclusion

The tenth conclusion is that to the spoken term 'chimera' there does not correspond [only] a simple concept, for then it would supposit for the thing or things covered by that concept; but this is false, for neither something is nor some things are a chimera.

Eleventh conclusion

Therefore, there follows the eleventh conclusion, namely, that to the spoken term 'chimera' there corresponds a complex concept, which it primarily signifies and in terms of which it was imposed to signify. For we have declared that it is necessary that to an utterance there should correspond a concept that it immediately signifies or in terms of which it is imposed to signify. Therefore, if there does not correspond to it a simple concept, there has to correspond to it a complex concept that supposits for nothing. And now we are to go on to see how this is true.

With this in mind we should realize that on every incomplex concept a corresponding incomplex utterance can be imposed, and on every complex a complex one. But since utterances are imposed to signify by convention [*ad placitum nostrum*], we can impose on any concept, no matter how complex, an incomplex utterance signifying immediately that complex concept, and consequently also everything that is conceived by that concept. For example, some poet distinctly conceived by means of a huge complex concept the story of Troy, of how Paris abducted Helen, and of how for this reason the Greek king invaded the Trojans, etc. And then, that poet, in accordance with

that concept, in a distinct and complex manner wrote a huge book signifying all the things that were mentally conceived by that complex concept. Finally, he imposed the incomplex name 'Iliad' to signify in the same way as that in which that huge book signified, and thus to the name 'Iliad' there corresponds a concept that is complex in very many ways.

But to turn more specifically to the original question: the expression 'place not filled with body' corresponds to the complex concept by which we think of place and body and filling, and yet the name 'vacuum' was imposed to signify simultaneously everything that is signified by the expression 'place not filled with body'. Therefore, the expression 'place not filled with body' is said to be the description of a vacuum, stating the nominal definition, which does not indicate what sort of a thing a vacuum is but what things, and how, the name 'vacuum' signifies. And for this reason this proposition is not true: 'A vacuum is a place not filled with body', except in material supposition, in the sense that the name 'vacuum' signifies the same things and according to the same concept as the expression 'place not filled with body' signifies. Therefore, the name 'vacuum' signifies many things, namely, those that are signified by the terms 'place', 'body' and 'filled', and there corresponds to it a complex concept by which many things are conceived. Nevertheless, neither that concept, nor the name 'vacuum', nor its nominal definition supposit for something, since the addition 'not filled with body', or the concept corresponding to it, removes the supposition of the term 'place' or the concept corresponding to it, given that every place is filled with body, just as 'non-risible man' supposits for nothing, because every man is risible.

In the same way, therefore, to the term 'chimera' there corresponds a complex concept, by means of which many things are conceived, but which, however, supposits for nothing. For [in this complex concept] the determination is incompatible with the determinable, as is clear on the basis of the description providing the nominal definition, which is laid down thus: 'a chimera is an animal composed from members from which nothing can be composed', so that the same complex concept corresponds in the mind to this spoken expression and to the term 'chimera'. And thus the term 'chimera' signifies all that the terms 'animal', 'members', and 'composed' do, but still it does not supposit for anything, as neither does the complex concept corresponding to it. The reason for this is that the determination or addition 'of which nothing can be composed' removes the supposition of the other part, namely, of the expression 'animal composed of members', since it is incompatible with it.

But some people have doubts about this [reply], for it would follow that the term 'man' signifies all animals, which seems to be false. The consequence is clear, for its definition is 'rational mortal animal'; therefore, in accordance

with what has been said, the same concept corresponds to the term 'man' and the expression 'rational mortal animal', and that term and that expression signify equally the same things; but the expression 'rational mortal animal' signifies all animals by the term 'animal'; therefore, so does the term 'man'.

The reply to this is that this definition of 'man' is not a nominal definition, namely, one expressing what thing or things and in what ways the name 'man' signifies, but is rather a definition expressing what the thing is for which the name 'man' supposits, this being the same as that for which the expression 'rational mortal animal' supposits. But it is not necessary that those terms precisely and adequately supposit for the things that they signify. So only a spoken term to which there corresponds not a simple but a complex concept is one that has a nominal definition in the strict sense, namely, [a definition] that signifies precisely what and how that term signifies. For the signification of such a spoken term is explicated by means of spoken terms corresponding to the simple concepts of which the complex concept corresponding to that term is composed. But when to some spoken term there corresponds a simple concept, as when to the term 'donkey' there corresponds the specific concept of donkey, which we assume to be simple, it is not possible for another spoken term to signify precisely and adequately the thing or things that that term signifies, unless it is entirely synonymous with it. Nor is it possible to posit a spoken expression consisting of terms of diverse significations, without there corresponding to them other concepts that do not correspond to that term. But where a spoken term to which there corresponds a simple concept is concerned, it is possible to provide a causal definition, or a description declaring what the causes or properties of the thing or things for which this term supposits are, or even a quidditative definition consisting of the genus and difference, to which there corresponds a complex concept but which adequately supposits for the same things that are supposited for by the incomplex concept that corresponds to that spoken term. But these points had to be clarified in more detail in the treatise on definitions, divisions, and demonstrations.[24] And I am glad that I have understood these issues.

There are other points to be made about supposition and the causes of truth of propositions, but before dealing with them I want to respond to the sophisms propounded thus far.

24. See 8.2.4.

Replies to the sophisms

TO THE FIRST SOPHISM [EVERY SPOKEN PROPOSITION IS TRUE]

To the first sophism I reply that it is false.

P.1 And I declare that it does not suffice for the truth of a spoken proposition that it has a similar mental proposition corresponding to it, for this is common to all propositions [whether they be true or false]; therefore, it is not sufficient [for its truth] that in whatever way it signifies a concept so it [the concept] is in the mind. But what is necessary and sufficient for this will be stated later on, in due course.[25]

TO THE SECOND SOPHISM [A HORSE IS A DONKEY]

To the second sophism it is replied that it is false, and its contradictory is true, namely, 'No horse is a donkey'.

P.1.1 And when it is argued that this is not true, because it is not so where the things signified are concerned, namely, horses and donkeys, I concede that it is neither so nor otherwise, because they do not exist. But it is not necessary for the truth of a negative proposition that it somehow correspond with the things ultimately signified, namely, with things beyond the concepts corresponding to the propositions. What is necessary and sufficient will be covered later.

TO THE THIRD SOPHISM [GOD DOES NOT EXIST]

To the third I reply that it is false.

P.1 And I also declare that the expression 'God does not exist' signifies nothing that does not or cannot exist, namely, anything that does not correspond [to this expression] in the mind, as far as the things that it signifies in the mind

25. *Sophismata,* chap. 2, Fourteenth conclusion.

are concerned; and [this expression does not signify anything] that does not or cannot exist outside the mind, as far things that it signifies outside the mind are concerned. But at the same time this does not suffice for the truth of the proposition, as will be explained later. And I also declare that the expression 'God does not exist' does not signify *that God does not exist* [*Deum non esse*]—for *that God does not exist* is nothing, as I assume, and neither was, nor will be, nor can be [anything]—therefore, this is false: '*That God does not exist* is signified', for this is an affirmative proposition and its subject supposits for nothing.

P.2 To the other argument I reply that this is not false: 'Every God exists'; indeed, it is most true.

P.2.2 And when it is said that the proposition 'God exists' signifies more than the term 'God' does, I concede that it signifies more in the mind, for it signifies a mental proposition and the term 'God' signifies in the mind only a simple concept.

But it is a legitimate question whether the proposition signifies more outside [of the mind], namely, when one takes into account the things conceived by the various concepts corresponding to the term 'God' and to the expression 'God exists'.

And concerning this [question] it seems to me that it has to be stressed that there is a great difference between the propositions 'God exists' [*Deus est*] and 'God is God' [*Deus est Deus*] when one takes into consideration the things signified outside the mind. For 'God exists', given that it has in the mind a subject, predicate, and copula, is equivalent to this: 'God is a being'. And thus it signifies many more things than 'God is God', for ['God is a being'] signifies all beings on account of the term 'being'. But 'God is God' externally signifies only God, for the word 'is', precisely as a copula, signifies nothing externally apart from the significations of the categorematic terms, given that it signifies only the complexive concept by which the intellect forms propositions from the terms 'God' and 'God'.

But now there is a difficult question, for it was said earlier that by every concept something is conceived. What then is conceived by the complexive concept corresponding to the copula 'is', when I say 'God is God' or 'A man is a stone?'

I reply that I said some things about this in chapter 3 in the first treatise of the *Summulae*,[26] and I now go further and add that since the intellect cannot form that complexive concept without the categorematic concepts that it combines, nothing is conceived by that concept alone. But we conceive the very same things in a complex manner by means of the categorematic concepts as

26. See 1.3.2.

those that were conceived in an incomplex manner by those categorematic concepts without that complexive concept. Therefore, different things are no conceived by the concept corresponding to the various expressions 'God is God', 'God is not God', 'Every God is God', 'No God is God', and to the simple term 'God'; rather, one thing is conceived in different ways, namely, in a complex or incomplex manner, and affirmatively or negatively. So, coming back to the solution of the sophism, I say that although the expression 'God is God' signifies more in the mind than the name 'God', nevertheless, it signifies nothing more outside [the mind], but entirely the same [thing], although in a different manner.

TO THE FOURTH SOPHISM [THE NAME 'CHIMERA' SIGNIFIES NOTHING]

To the fourth sophism I reply that it is false, and I concede that the name 'chimera' does not signify a chimera, nor something other than a chimera: for nothing is other than a chimera, since a chimera is nothing, and nothing is other than a non-being. But it does signify many things that are not chimeras, but without any of them being a chimera. Nor is the case similar with the terms 'man' and 'whiteness', for to those there correspond simple concepts that supposit for something. And [thus], in short, all the arguments provided have been solved on the basis of what has been laid down.

TO THE FIFTH SOPHISM [COMPLEXLY SIGNIFIABLES ARE CHIMERAS]

To the fifth sophism I reply that it is false; indeed, all beings in the world are complexly signifiable; further, every being, however simple it may be, is signifiable complexly. For example, God, who is the most simple, is signified complexly by the expression 'God is God', as was indicated in the solution of the third sophism.

P.1.1.1 I also say that before God created the first creature, there was nothing but God; therefore, there was nothing complexly signifiable, apart from God.

P.1.1.2 And then when you argue that a man did not then run, I concede that. But when you infer 'therefore, then it was the case that a man did not

run', I reply that it was so in the sense that there was something that was not a man running, namely, God. But it was neither so nor otherwise with respect to the things signified by the expression 'A man did not run', nor is this [latter alternative] required for the truth of a negative [proposition], and this will be covered later.

P.2 Similarly, when you say that this is true: 'Antichrist will exist', I concede it, but when you conclude 'therefore, it is the case that Antichrist will exist', I deny it, except in the sense that there is something that is not Antichrist; however, Antichrist's future existence [*Antichristum fore*], or this [fact] *that Antichrist will exist* [*hoc quod Antichristus erit*], does not exist. But the grounds on which this proposition is true will be dealt with later.[27]

P.3 To the other [argument], I concede that, in the case assumed, God can create B and B can be created by God and that those propositions are true. But when you conclude that 'therefore, it is so that B can be created', I deny this, since *that it is possible for B to be created* is nothing, although it can be—for it can be B.

P.4 But then you ask: 'But *that God can create B* [*Deum posse creare B*] is, is it not?'. And I say, yes, and it is God. And likewise if God creates B, then *that God creates B* [*Deum creare B*] is God. But when you argue against this, because *that God creates B* is contingent, I deny this; indeed, *that God creates B* is maximally necessary [*summe necessarium*], taking the subject *'that God creates B'* significatively. But if it is taken in material supposition, then it is true that *that God creates B* is contingent, for taken in this way that subject supposits for the proposition 'God creates B', and this is contingent.

P.5 To the other [argument] I reply that *that Socrates loves God* is Socrates, if Socrates loves God; but if he does not love God, then *that Socrates loves God* is nothing.[28] In a similar fashion, *that Socrates hates God* is Socrates, if Socrates hates God; but if Socrates does not hate God, then it is nothing; therefore, when you argue thus: '*That Socrates loves God* is Socrates', I concede it, assuming it to be the case that Socrates loves God. And if you say: 'in the same way, *that Socrates hates God* is Socrates', I deny it, for it is nothing, when Soc-

27. In the chapter on ampliation. *Sophismata,* chap. 5.

28. As can be seen here, in general, Buridan would treat sentential nominalizations of categorical propositions in the following manner: if 'S is P' is a categorical proposition, and '(S is P)' is its nominalization (be it a that-clause, an accusative with infinitive, or gerundive construction), then, taken significatively, '(S is P)' supposits for whatever both 'S' and 'P' supposit for, if 'S is P' is true; and '(S is P)' supposits for nothing otherwise. In this way Buridan manages to assign some credible semantic function to such sentential nominalizations without having to subscribe to a dubious ontology of eternal or quasi-eternal *enuntiabilia,* or *complexe significabilia,* distinct from ordinary substances and accidents. See the introduction for more details.

rates loves God. But, perhaps, *that Socrates hates God* was Socrates, if Socrates earlier hated God. Therefore, when it is further said that *that Socrates loves God* is good and commendable, I concede it; for it is a good man who loves God. And when it is said: *that Socrates hates God* is damnable, I deny it, for [*that Socrates hates God*] is nothing. But *that Socrates hates God* was bad, for it was a bad man hating God. And it is not unacceptable that a good man was a bad man; therefore, neither is it impossible that to love God was to hate God.[29]

TO THE SIXTH SOPHISM [NOBODY LIES]

To the sixth sophism I reply that it is a contingent proposition, and such a proposition is often false, for people often lie.

P.1 And when it is said that everyone uttering a proposition has a similar one in the mind, I say that this is true. But a man does not lie, nor is he excused from lying, for this reason; rather, he lies because he verbally propounds a proposition in an assertive manner, and he does not assent to the corresponding mental one but rather dissents from it, and this is possible. Alternatively, we could put it in other words, and the point is the same, namely, that a man lies because he verbally asserts a proposition that he believes to be false.

These are the remarks, therefore, that have been made about these sophisms, and they should be posited as the first chapter of this present work.

Chapter 2: On the causes of the truth and falsity of propositions

The second chapter will deal with the causes of the truth and falsity[30] of purely categorical propositions. In the preceding discussion some difficulties have already been touched on. And they will in a manner be recapitulated by propounding some brief sophisms.

29. Although, of course, it would be impossible that to love God is to hate God, just as it would be impossible that a good man is a bad man.

30. See 1.6.5 n. 85.

First sophism: Aristotle's horse does not exist

One posits the case that Aristotle had a horse that cantered well but it died, indeed, it got annihilated by divine power. Then the sophism is obvious[ly true] on the basis of the case.

O.1 But the opposite is argued for, namely, that the proposition 'Aristotle's horse does not exist' is false. For a proposition is true on the grounds that in whatever way it signifies, so are the things signified, and a proposition is said to be false on the grounds that it is not the case that in whatever way it signifies so are the things signified. And this is generally conceded and is confirmed by the common manner of speaking. For when it seems to us that someone has said something true, we say that it is as he said; and if it seems to us that he said something false, then we say that it is not as he said. And this is why Aristotle in books 5 and 6 of the *Metaphysics* says that according to one signification of 'being' and 'non-being', 'being' signifies the same as 'true', and 'non-being' the same as 'false'.[31] And it does not seem that any other cause could be assigned for the truth and falsity of propositions.

Assuming this, therefore, as true and proved, it appears that the proposition 'Aristotle's horse does not exist' is false; for it is not so with respect to the things signified in the way that it signifies, for the thing signified, namely, Aristotle's horse, is nothing, and what is nothing is neither so nor otherwise.

Second sophism: Aristotle's horse walked

P.1 This is proved by use of the case posited at the beginning of the previous sophism.

O.1 But it is disproved just as was the previous one. For it is not so with respect to the thing signified as is signified by the proposition. And it could be argued in the same way concerning the propositions 'Aristotle's horse is dead' and 'No horse is a donkey', positing that there are neither horses nor donkeys but that all of them are annihilated. For it holds true for any of these propositions that it is not so with respect to the things signified as is signified by the proposition.

31. Aristotle, *Metaphysics* V.7.1017a31–32, VI.1.1026a33–35.

Third sophism: A chimera is a chimera

P.1 This is proved by [the authority of] Boethius, who says: "No proposition is truer than the one in which the same thing is predicated of itself."[32]

P.2 Again, if it were not true, then this would only be because the term 'chimera' supposits for nothing. But this does not prevent its truth, for the [proposition] 'Aristotle's horse walked' is true, even though the subject supposits for nothing.

P.2.2 This I prove: for that subject does not supposit for something other than Aristotle's horse; and that is nothing, given the case posited above; therefore, it supposits for nothing.

O.1 The opposite holds because this is an affirmative proposition and its terms supposit for nothing, and such affirmative propositions are false.

Fourth sophism: A vacuum is a place not filled with body

P.1 Proof: here the definition is predicated of the definitum, or the description of what is described, and such [a predication] is true, and this is why Aristotle asserts it.[33]

O.1 The opposite is argued [as follows]. This is valid: 'A vacuum is a place not filled with body; therefore, a vacuum exists'. But the consequent is false according to Aristotle, and, I believe, according to the truth; therefore, so is the antecedent.

O.2 Again, this is an affirmative proposition, the subject of which supposits for nothing; therefore, it is false.

Fifth sophism: A man is a donkey

P.1 Proof: things are entirely in whatever way the proposition signifies them to be; therefore, it is true.

32. Boethius, *In librum Peri Hermeneias Aristotelis* (Leipzig: Teubner, 1877, 1880), p. 215 (1st ed.), p. 479 (2d ed.).

33. Aristotle, *Physics,* IV.7.214a16–17.

P.1.1 Proof of the antecedent: if it signifies a mental proposition, then that is similar and corresponding within the mind, and if something external is signified, then it is either man or donkey, and those exist; therefore, things still are in the way the proposition signifies them to be. If you were to say that not only man or donkey is signified, but that a man is a donkey, then I prove that this is false; for *that a man is a donkey* is nothing, nor was it, [nor will it be], nor can it be. Thus in the proposition *'That a man is a donkey* is signified by such a proposition' the subject, namely, *'That a man is a donkey',* supposits for nothing; therefore the proposition is false, for it is affirmative.

P.2 Again, if you say that that proposition signifies [something] to be in some way, I ask whether that *to be in some way* is or is not. If you say that it is, then I have what I intend, namely, that in whatever way it signifies so is [the thing that it signifies]. If you say that it is not, then what you say is false, namely, that [*something*] is signified *to be in some way* by that proposition. For, as I said, that proposition is affirmative but its subject supposits for nothing.

O.1 The opposite is conceded by everybody.

Sixth sophism: I say [something] false

P.1 Having posited the case that I utter the proposition 'I say [something] false', and nothing other, the sophism is proved [as follows]: by so saying I either say [something] false or I say [something] true. If I say [something] true, then it is true that I say [something] false; therefore, the sophism is true. If I say [something] false, then so it is as I say; therefore, I say [something] true; and thus the sophism is true again.

P.2 Again, if the sophism is true, then the subject and the predicate, namely, 'I' and '[someone] saying [something] false',[34] supposit for the same, for 'I' supposits for me and '[someone] saying [something] false' likewise; and such a proposition, since it is affirmative, is true; therefore, the sophism is true.

O.1 The opposite is clear: for if the sophism is true, then it also follows that it is false, and thus it is both true and false, which is impossible.

O.1.1 Proof of the consequence: if it is true, then it is true that I say [something] false; and it is something false that I say; but it was posited that I say nothing else but that sophism; therefore, it is false.

34. Of course, Buridan analyzes *ego dico falsum* ('I say something false') as *ego sum dicens falsum* ('I am someone saying something false').

And we should note that this sophism is called one of the *insolubles,* and it cannot be solved except by considering on what basis a proposition is said to be true or false. Therefore, it seems to me that the treatise on insolubles should follow rather closely on the present chapter. This is why I intend to deal with them immediately after I have discussed supposition and appellation in the next chapter, as well as the measure according to which a proposition is to be called true or false.

For the present, therefore, for the solution of the aforementioned sophisms and similar ones, I put forth some conclusions relevant to the basis on which propositions are said to be true or false. And in order to speak intelligibly, I assume, in accordance with what was said earlier, that utterances have two significations: one is in the mind, for they immediately signify the concepts corresponding to them, in accordance with which, or with concepts similar to them,[35] they were imposed to signify; they have another signification because, by the mediation of the said concepts, they signify the things that are conceived by those concepts, and because often the things conceived are outside the mind, as in the cases of a stone or a donkey. Therefore, I will call by convention [*ad placitum*] the first of these [signification] 'in the mind' [*apud mentem*], and the second I will call signification 'outside [the mind]' [*ad extra*].

First conclusion

I posit therefore the first conclusion, namely, that it is not necessary for a spoken proposition to be true if howsoever it signifies [anything] in the mind, so is [anything it signifies] in the mind, for then it would follow that every spoken proposition would be true—for to every spoken proposition, whether true or false, there corresponds a similar one in the mind.[36]

35. See n. 24 of the introduction.

36. To be sure, what Buridan has in mind here is a structural similarity (i.e., an isomorphism) between a spoken and a mental proposition with regard to their representative, semantic function, and not a similarity in terms of any physical or other properties pertaining to them on account of what kind of entities they are. Furthermore, the structural similarity in question is to be understood in such a manner that just as the semantic values of the spoken proposition are compositionally dependent on the semantic values of its syntactic parts, so the semantic values of the corresponding mental proposition are functionally dependent on the semantic values of the simple concepts corresponding to the syntactic parts of the spoken proposition. Nevertheless, this of course need not entail that these simple concepts

Second conclusion

The second conclusion is that it is not required for the truth of a spoken proposition that howsoever it signifies [things to be] outside [the mind] so should the things signified be outside [the mind]. Or let us put this conclusion in the following form: some proposition is true, yet it is not the case that howsoever it signifies [things to be] outside, so are the things that are signified outside.

This conclusion is proved: for I posit that Antichrist does not yet exist but will exist and will walk, and then this is true: 'Antichrist will walk', and by this proposition Antichrist and his walking are signified outside, they, however, amount to nothing; and where what is nothing is concerned it is neither so nor not so; therefore, where the things signified outside by this proposition are concerned, the case is not so as is signified by this proposition. It would be argued in a similar manner about 'Aristotle disputed', assuming that Aristotle is annihilated. And thus could it be argued about 'Antichrist can walk', and one could argue in the same way also about the negative [proposition] 'A horse is not a donkey', assuming that God annihilated all horses and all donkeys; for since the things signified would not exist, it would neither be so nor not so where they are concerned.

Third conclusion

The third conclusion is that the proposition 'A man is a donkey' does not signify that a man is a donkey, indeed, that a man is a donkey is not signified by the proposition 'A man is a donkey', for *that a man is a donkey* neither is nor can be. For just as *that a man runs,* if it exists, is a man running, and *that a man is white* is a white man, so too, *that a man is a donkey* is a man being a donkey, and it is impossible for this to be; therefore, the proposition '*That a man is a*

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should be literally constituents or integral parts of the mental proposition *in the same way* as the syntactic parts of the spoken proposition are parts of the spoken proposition (or, for that matter, as the parts of the corresponding written proposition, i.e., extended in space and time, cf. Buridan's remark to this effect on p. 839); indeed, according to Buridan, any concept, whether it is *semantically* simple or complex, is an *ontologically* (and hence also syntactically) simple quality of the human mind. For more on the distinction between syntactic and semantic simplicity and complexity see the introduction.

donkey is signified' is an affirmative [proposition], but its subject supposits for nothing, because *that a man is a donkey* is nothing, nor can it be; and so it is false, from which it follows that this is true: '*That a man is a donkey* is not signified by such a proposition'. One would prove in the same way that *that a man is a donkey* cannot be understood, believed, etc.

Q.1 But you might ask: it is false that a man is a donkey, is it not?

R.1 I reply that it is neither true nor false, properly speaking [*de proprietate sermonis*], i.e., taking the whole significatively and not in material supposition. But it has to be conceded that often such "that-clauses" [*orationes infinitivi modi*] are taken materially and supposit for certain propositions, so that 'that a man runs' supposits for the proposition 'A man runs', and 'that a man is a donkey' for the proposition 'A man is a donkey'. And then we should concede that *that a man is a donkey* is false, for this is tantamount to saying that the proposition 'A man is a donkey' is false, just as it is to be likewise conceded that *that a man is a donkey* is not nothing but is a false proposition.

And in connection with this we have to note that some people, in order to escape the difficulties, have wanted to claim that such "that-clauses" supposit only for propositions: 'that a man runs' for the proposition 'A man runs', and 'that a man is a donkey' for the proposition 'A man is a donkey', and so forth for others. But that is not true, for according to Aristotle in the *Categories*[37] to cut is to act and to be cut is to be acted upon; and thus also *that a man cuts* is t*hat a man acts,* and *that a piece of wood is cut* is *that a piece of wood is acted upon,* and *that a man is white* is *that a man is colored.* Indeed, such propositions are to be conceded, but all these contentions would be false, were the [that-clauses] to supposit for propositions. For the proposition 'A man cuts' or 'A man is white' is not the proposition 'A man acts' or 'A man is colored'.

Again, everybody concedes that *to love God* is very good and *to hate God* [i.e., *that (someone) hates God*] is very bad, but these [claims] would not be true [if their subjects were] suppositing for propositions. For I can form in my mind without any malice the proposition 'A man hates God'.

Q.2 But then the question arises as to whether *that Aristotle exists* or even *that a man exists* is signified by the proposition 'A man is a donkey' or by the term 'man'. And one could query likewise about *that a man existed* and *that Aristotle existed.*

37. Aristotle, *Categories* 9.11b1–4.

Fourth conclusion

And we put forth some conclusions concerning these questions.

One of these, the fourth in this chapter, is that *that a man exists* is signified by the term 'man', for every man is signified by the term 'man'. But every man is *that a man exists,* as should be seen in bk. 4 of the *Metaphysics.*[38] And I also explained in [my commentary on] bk. 1 of the *Physics* that *that a man generates* is a man generating, and that *that a man is white* is a white man;[39] therefore, it follows by *Darapti* in the third figure that *that a man exists* is signified by the term 'man' and *that a donkey exists* is signified by the term 'donkey', and similarly, *that a man is an animal, that a donkey is an animal,* etc. Or again, when a man runs, *that a man runs* is signified by the term 'man', for every man is signified by that term, and some man is *that a man runs.* The conclusion follows in the third figure by *Datisi.*

Fifth conclusion

The fifth conclusion is that *that a man exists* is signified by the proposition 'A man is a donkey': for everything that is signified by the terms or by one of the terms of a proposition is signified by that proposition. Indeed, a proposition is not imposed to signify in itself as a whole, all at once, but by means of its terms taken separately, which the intellect combines affirmatively or negatively, as it wants. Therefore, it comes about that the proposition signifies outside the mind the things it signifies on the basis of the signification of [its] terms; therefore, if *that a man exists* is signified by the term 'man', and *that a donkey exists* is signified by the term 'donkey', then it follows that they are [also] signified by the proposition 'A man is a donkey'.

38. Aristotle, *Metaphysics* IV.2.1003b26–27.

39. J. Buridan, *Quaestiones super octo Physicorum libros Aristotelis: Kommentar zur Aristotelischen Physik* (Paris, 1509; reprint, Frankfurt am Main: Minerva, 1964), bk. 1, q. 18.

Sixth conclusion

As the sixth conclusion it seems to me that it has to be posited that *that a man existed* is signified by the term 'man' and, consequently, by the proposition 'A man is a donkey': for every present, past, and future man is signified indifferently by the term 'man', for it signifies without time;[40] therefore, Aristotle is signified by the term 'man'. For terms such as 'think', 'signify', and 'know' ampliate their terms to supposit for past and future [things], as will be said later.[41] Furthermore, just as the predicate 'dead' ampliates supposition to past [things], so also, for a similar reason, does the predicate 'was'. Therefore, just as this is conceded: 'Aristotle is a dead man', so it is to be conceded that Aristotle is *that a man was.* And we argue as follows: Aristotle is signified by the term 'man'; and Aristotle is *that a man was;* therefore, *that a man was* is signified by the term 'man'.

Seventh conclusion

As the seventh conclusion, one has to add that *that Aristotle exists* is signified by the term 'man' and, consequently, by the proposition 'A man is a donkey' as well as by 'A man is an animal'. We should note that a participle of the present or future tense is drawn into suppositing for past [things] by a verb of past tense. For example, it is true that Aristotle was [someone] running and that [someone] running was Aristotle, indeed, it is also true that Aristotle was to be generated. And in a similar manner an infinitive-with-accusative construction [*oratio infinitivi modi*] is drawn into suppositing for past [things]. For example, Aristotle saw Alexander ride.[42]

Since the verb 'to signify' or 'to be signified' ampliates supposition to past and future [things], it follows that if Aristotle is signified by the term 'man',

40. That is to say, nouns do not have the temporal connotation verbs have.

41. In chap. 5, Fifth sophism.

42. *Aristoteles vidit Alexandrum equitare.* The point Buridan wants to make, which does not quite come across in English, is that in the context of a past-tense verb even a present-tense infinitive construction can supposit for past things. I have tried to translate such constructions consistently by that-clauses throughout the text. In this case, however, English syntax would demand that the that-clause itself should be in the past tense (namely, in 'Aristotle saw that Alexander was riding'), which would ruin Buridan's logical point.

and Aristotle was *that Aristotle exists,* then *that Aristotle exists* is signified by the term 'man'.

Eighth conclusion

From what has been said I infer the eighth conclusion, namely, that every true affirmative proposition about actuality [*de inesse*] and about the present [*de praesenti*] is not true on the ground that whatever and howsoever it signifies as being, so it is, for the proposition 'A man is an animal' is true, by which, however, *that Aristotle exists* is signified [*Aristotelem esse significatur,* i.e., Aristotle is signified to be], whereas it is not so where the thing [signified] is concerned.

Again, whatever and howsoever is signified as being by the two propositions 'A man is a man' and 'A donkey is a donkey,' that also is signified as being in the same way by the proposition 'A man is a donkey', as is clear from what has been said. But the latter is false, and the former two were true. And thus, it seems to me that in assigning the causes of truth or falsity of propositions it is not sufficient to deal with significations, but we have also to take into account the suppositions concerned.

Ninth conclusion

And next, where supposition is concerned, I put forth the ninth conclusion, namely, that it does not follow that if the terms of an affirmative proposition supposit for the same [thing], then the proposition is true. For in the first place one has a counterinstance in the case of universal propositions, for if only one man is running, then the subject and the predicate of the proposition 'Every man is running' supposit for the same [one thing], and yet the proposition is false.[43] But even if the predicate supposits for everything that the subject sup-

43. The proposition is false because the subject term, besides suppositing for the one man who is running, also supposits for the others who are not running, whereas the truth of the proposition requires not only that its terms supposit for the same one thing but that all

posits for, there still is a counterinstance drawable in what have been called insolubles, as when Socrates says nothing but the proposition 'Socrates says [something] false', then this proposition is false, as will be explained later, even though the subject and the predicate, namely, 'Socrates' and '[someone] saying [something] false', supposit for the same [thing], namely, Socrates. And such is often the case where other so-called insolubles are concerned, but they will be discussed more specifically later.

Tenth conclusion

The tenth conclusion is that for the truth of an affirmative categorical proposition it is required that the terms, namely, the subject and the predicate, supposit for the same thing or things; therefore, it suffices for its falsity that they do not supposit for the same thing. And perhaps this is not a conclusion but rather an indemonstrable principle, or, if it is a conclusion, it comes close to an indemonstrable principle. But it is clear from the *Posterior Analytics* that sometimes [even] indemonstrable principles need some clarification whether this be by example or induction, or by something such.[44] Therefore, I clarify the tenth conclusion in the following manner: it is certain that in the proposition 'A is B', the term 'A' either supposits for nothing or it supposits for A, and the same goes for 'B'. Similarly, if I say 'Aristotle disputed' or 'Antichrist will walk', the term 'Aristotle' either supposits for nothing or it supposits for Aristotle, and the same goes for Antichrist and others. Furthermore, it is also clear that if we say 'A is B', then provided that the terms are not ampliated[45] to the past or future, it follows that to say 'A is B' is equivalent to saying that A is the same as B—and thus also to say that A is not B is equivalent to saying that A is not the same as B. But if it is true that A is the same as B, then it is necessary that the terms 'A' and 'B' supposit for the same thing, in the sense that some A should be posited to be the same as some B. And the same goes for the past and the future. For there is no difference in saying 'Aristotle was [someone] disputing'[46] and 'Aristotle was the same as [someone] disputing'; therefore,

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supposita of the subject should be identical with some or another of the supposita of the predicate.

44. Aristotle, *Posterior Analytics* II.19.99b17–19.

45. Correcting the Pironet text's *ampliativi* to *ampliati.*

46. *Aristoteles fuit disputans.* Buridan's theory of "substantivated adjectives" (which ap-

in this proposition the terms 'Aristotle' and '[someone] disputing' supposit for the same [thing] (for 'Aristotle' [supposits] for Aristotle and '[someone] disputing' for [someone] disputing), not because Aristotle and [someone] disputing are the same, but because they were the same, and the case is similar with the future and the possible.

Eleventh conclusion

The eleventh conclusion is that for the truth of a negative categorical [proposition] it suffices that the subject and the predicate supposit neither for the same thing nor for the same things, although some [such proposition] can be true in which the subject and the predicate do supposit for the same thing or things, as in 'An animal is not a man'. And thus it is also requisite for the falsity of a negative categorical that the subject and the predicate supposit for the same thing or things, although [the following implication] is not valid: 'the subject and the predicate supposit for the same [thing or things]; therefore, the negative proposition is false'.

This conclusion is clear from the preceding. For contradictories always comprise one affirmative and one negative [proposition], and it is necessary that one should be true and the other false (if they exist simultaneously),[47] and they never can [both] be true or false at the same time. And this is so only because whatever and however many are the causes of truth of the one, those and that many are the causes of falsity of the other, and conversely. Therefore, whatever is required for the truth of the affirmative, the same is required for the falsity of the contradictory negative; and also whatever suffices for the falsity of the affirmative suffices for the truth of the contradictory negative.

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plies to participles as well) certainly justifies the insertion of 'someone' in the translation. In any case, it must be the interpretation conveyed by this insertion that Buridan has in mind when he claims that his analysis has the status of a first principle. See the introduction for more details on the significance of this move in Buridan's nominalism.

47. Let us not forget that propositions for Buridan are individual utterances or inscriptions with a determinate "life span" in time.

Twelfth conclusion

The twelfth conclusion is that for the truth of an affirmative indefinite or particular categorical [proposition] it is necessary and sufficient that the subject and the predicate supposit for the same [thing or things], except when because of its self-referential character [*per reflexionem illius propositionis supra seipsam*] the proposition along with its context [*cum circumstantiis adiacentibus*][48] entails that it is false. And I say that a proposition is self-referential [*habere reflexionem supra seipsam*] if it asserts itself to be false or if it asserts something that implies, either absolutely or along with the context, that it is false, or even when it denies itself to be true, or it asserts something that implies that it is not true, as is the case with the so-called insolubles, but this will be discussed later.[49]

This conclusion, therefore, is clear: first, that this [condition] is necessary for the truth [of such a proposition] was laid down in the tenth conclusion; but that it is also sufficient is proved by induction, for there is no counterinstance, since such [a proposition, namely, one that meets this condition] is always true.

And this is also clearly evident from the terms involved. For 'A is B' signifies the same as 'A is the same as B' and, 'A was B' the same as 'A was the same as B', and 'A will be B' the same as 'A will be the same as B', and 'A can be B' the same as 'A can be the same as B'.

But it may well be asked why this has a counterinstance in the case of the so-called insolubles. To this we briefly reply that the reason is that such a proposition either absolutely or along with the context implies a contradiction. For it affirmatively asserts itself to be false, from which it follows, since it is affirmative, that the term suppositing for it and the term '[something] false' supposit for the same, for this is what is required for the truth of an affirmative. And again, also from [the fact] that it asserts itself to be false, it follows that its terms do not supposit for something or for the same [thing], and this implies a contradiction [when taken together] with the other [conclusion] that followed, namely, that the terms supposit for the same; therefore, it is false. For [such a proposition] entails not only that it is false but also that it is true—provided it exists—and thus it implies the conjunction that it is false and it is true. And this conjunction is false because of the falsity of the second categori-

48. Here and henceforth the term 'context' is going to be used in a broad sense, in which it covers all sorts of perhaps nonlinguistic circumstances that may determine the truth or falsity of a proposition.

49. This is discussed in chap. 8.

cal, which is affirmative while its terms do not supposit for the same [thing or things]. And this will be discussed more specifically later.

Thirteenth conclusion

The thirteenth conclusion is that for the truth of a universal affirmative it is necessary and sufficient that for whatever thing or things the subject supposits, for that or those things the predicate should also supposit, except in the self-referential cases, as was laid down in the other conclusion.

And this is proved by induction, just as in the previous case. For from what has been said the basis on which any true proposition is said to be true and on which a false proposition is said to be false is already clear, except where the aforementioned so-called insolubles are concerned, and these will be discussed later in detail. For it is clear that we should not talk in the same way about all of them, but in one way about universals, in another way about particulars, in another way about affirmatives, and in another way about negatives.

Fourteenth conclusion

Therefore, recapitulating, we put forth the fourteenth conclusion, namely, that every true particular affirmative is true because the subject and predicate supposit for the same thing or things. And every true universal affirmative is true because for whatever thing or things the subject supposits for, the predicate supposits for that thing or for those same things.

And every false particular affirmative is false because the subject and the predicate do not supposit for the same thing or things.

And every false universal affirmative is false because not every thing or all things that the subject supposits for are also supposited for by the predicate.

And every true particular negative is true because the universal affirmative contradictory to it is false; and we have declared what the reason for this is.

And every true universal negative is true because the particular affirmative contradictory to it is false; and we have declared what the reason for this is.

And every false particular negative is false because the universal affirmative contradictory to it is true; and we have declared what the reason for this is.

And every false universal negative is false because the particular contradictory to it is true; and we have declared what the reason for this is.

And this fourteenth conclusion, which contains eight partial conclusions, appears to be entirely true on the basis of the foregoing [points] given the principle that whatever is the cause of truth of one of the contradictories, or is required for its truth, is the cause of the falsity of the other, or is required for its falsity. But in the end we should note—since we can use names by convention [*ad placitum*], and many people commonly use this way of putting the matter—that with respect to every true proposition we say: 'It is so', and with respect to every false one we say: 'It is not so', and I do not intend to eliminate this way of speaking. But for the sake of brevity I may use it often intending by it not what it signifies on account of its primary imposition but the diverse causes of truth and falsity assigned above for diverse propositions, as has been said.[50]

Now we have to go on to respond to the sophisms in due form.

50. Buridan will often refer back to this remark, reminding us that whenever he uses his simple formula *qualitercumque propositio significat ita est* (in whatever way the proposition signifies things to be, so things are) or any of its stylistic variants, he uses it as a place-holder for the conditions of the truth of the several types of propositions he laid down here. Note also how this general formula is related to the colloquial phrase *A est B, necne?—Ita est.* (lit.: 'A is B, isn't it?—So it is'). What causes the trouble in the translation is the fact that apart from such a conversational context English demands some identification of the grammatical subject of this reply, which is not demanded by Latin. This is why, in translating *qualitercumque propositio significat ita est,* I will use the somewhat more complicated circumlocution 'In whatever way the proposition signifies things to be, so they are', or its stylistic variants. A more literal translation would be: 'Howsoever the proposition signifies so it is', which is T. K. Scott's solution, but since grammatically it seems to suggest that it is the proposition that is referred to by 'it' and not what the proposition signifies, meaning 'Howsoever the proposition signifies so the proposition is', I will use the more precise circumlocution.

Replies to the sophisms

TO THE FIRST SOPHISM [ARISTOTLE'S HORSE DOES NOT EXIST]

As to the first, I grant that Aristotle's horse does not exist.

O.1 And when it is argued that this [proposition] is false, since it is not the case that things are as it signifies, I grant this, for this is not required [for truth], especially in the case of negatives. But [this proposition] is true, for the subject supposits for nothing; therefore, the subject and the predicate do not supposit for the same, and this was [deemed] sufficient for the truth of a negative.

But then there is the following objection: you deny what Aristotle states in bk. 5 of the *Metaphysics,* where he says: "again, 'to be' and 'is' signify the same as 'true', and 'not to be' the same as 'not true', namely, 'false', and the case is similar with affirmatives and negatives."[51] These are the words of Aristotle, and he obviously seems to claim that every true proposition, whether affirmative or negative, is said to be true because it is the case that things are in reality [as it signifies]. And this is why it is said in the *Categories* that it is because the thing is [so] or is not [so] that an expression is said to be true or false.[52]

I respond by saying that Aristotle correctly remarks that here we do not have the principal signification of 'being', according to which 'being' is predicated of the ten categories, for in that principal way of taking [*acceptio*] the word, not only a true proposition is a being or beings but even a false one is a being or is beings. Since names are imposed to signify by convention, however, that was another imposition, namely, that the name 'being' or 'to be' should signify the same as the name 'true', and the same goes for 'not being' and 'not true'. And this made people err gravely, namely, [the fact] that when someone asserts a true proposition we say that it is just as he says; for they understand this in a wrong way and believe that this should be tantamount to saying that it is with the things signified just as that proposition signifies, and thus they wrongly understand it. Indeed, by 'it is so' one must not understand anything other than that it asserts something true. And this is expressed even more clearly by Aristotle in bk. 6 of the *Metaphysics,* where he says: "'being' as 'true' and 'non-being' as 'false', since they concern composition and division, together partition a contradiction."[53] And later on he declares that such cases

51. Aristotle, *Metaphysics* V.7.1017a31–32.

52. Aristotle, *Categories* 5.4b8.

53. Aristotle, *Metaphysics* VI.4.1027b17–20, 4.1027b30–31; I have corrected the text on the basis of the Greek and the Latin text provided with Aquinas's commentary.

of composition and division are in the mind rather than in reality; hence it is absurd to believe that the use of 'it is so' commits us to understanding that it is so where the things signified are concerned.

TO THE SECOND SOPHISM [ARISTOTLE'S HORSE WALKED]

To the second sophism we respond that the following are to be conceded: 'Aristotle's horse walked' and 'Aristotle's horse is dead', not because so it is with the things signified even as they signify, but because the subject and the predicate supposit for the same thing, although not for one that exists but for one that existed. For it is the same thing that is dead and that was walking, and that was Aristotle's horse. And it is not required that it be the same thing but that it was the same thing, because the verb 'was' and the participle *mortuus* [in Latin, corresponding to the English adjective 'dead'] are in the past tense. Likewise, I say that this is true: 'A horse is not a donkey'; [indeed, it would be] even if nothing was a horse or a donkey, not because it would be thus outside [the mind], but because the subject and the predicate would supposit for nothing, whence they would not supposit for the same thing.

TO THE THIRD SOPHISM [A CHIMERA IS A CHIMERA]

P.1 To the third sophism we reply that this is false: 'A chimera is a chimera'; and Boethius's authority should be understood as concerning only cases in which the terms supposit for the same thing.

P.2.1 But when it is said that [the proposition] 'Aristotle's horse walked' is true, I concede it. And when it is said that the subject, namely, 'Aristotle's horse', supposits for nothing, I deny this, although [it must be granted that] it does not supposit for something that exists but for something that existed.

P.2.2 But you go on to argue in a similar manner: 'it supposits for nothing other than Aristotle's horse; and that is nothing; therefore, it supposits for nothing'. I concede the premises, but the consequence is not valid, for the verb 'supposits' ampliates supposition to past and future things, and in the minor proposition there was no such ampliation but restriction to the present, indeed, the removal of supposition. So, in 'Aristotle's horse exists' or 'Aristotle's

horse does not exist', the subject supposits for nothing; therefore, you argue as if this were valid: 'A is nothing; therefore, A was nothing'. But this sort of ampliation and restriction of supposition will be discussed later.[54]

TO THE FOURTH SOPHISM [A VACUUM IS A PLACE NOT FILLED WITH BODY]

P.1 To the fourth sophism we reply that this is false: 'Vacuum is a place not filled with body'; for the terms supposit for nothing, nor is the nominal definition affirmed truly of the definitum, unless that definitum supposits for something. But the predication has to be interpreted in a material sense, thus: 'Vacuum is a place not filled with body', that is to say, the name 'vacuum' signifies precisely the same thing or things as does the expression 'place not filled with body', so that in the mind the same concept has to correspond to that name and to that expression with respect to signification.

TO THE FIFTH SOPHISM [A MAN IS A DONKEY]

To the fifth sophism I reply that this is false: 'A man is a donkey', for the terms do not supposit for the same thing.

P.1 It does not follow that it is true, because howsoever it signifies [anything to be] so it is; this has been already explained.

TO THE SIXTH SOPHISM [I SAY (SOMETHING) FALSE]

The sixth sophism pertains to insolubles; therefore, I reserve its solution for the chapter on insolubles, although it would be appropriate to treat of them immediately; nevertheless, because of their difficulty, I want first to deal with supposition.

54. This is discussed in chap. 5.

Chapter 3: On supposition

The third chapter will be about supposition. For deceptions in arguments often arise from the variation of supposition. And we should now see how this comes about. Let us put forth the sophisms.

First sophism: That God is unjust is to be denied by all the faithful

P.1 Proof: that the affirmation of which is heretical has to be denied; but to affirm that God is unjust is heretical; therefore, etc.

P.2 Again, everything false is to be denied; but that God is unjust is false; therefore, it is to be denied. And we would argue in the same way concerning the sophism 'That God does not exist is to be denied'. Proof: the opposite of that which is to be asserted is to be denied; but the opposite of [the claim that God does not exist] is to be asserted, namely, that God exists; therefore, etc.

O.1 The opposite is argued: for what is nothing is neither to be affirmed nor denied; but that God is unjust is nothing, and that God does not exist is nothing; therefore, etc.

O.2 Again, this proposition is affirmative, namely, 'That God is unjust is to be denied', and the subject, namely, 'that God is unjust' supposits for nothing, for that is nothing; therefore; [the proposition] is false.

Second sophism: You are a donkey

P.1 Proof: *that you are a donkey* is to be denied by you; therefore, *that you are a donkey* is.

P.1.1 The consequence is obvious, for the argument proceeds from 'is' as a copula [*ab 'est' tertio adiacente*] to 'is' as an absolute predicate [*ad 'est' secundum adiacens*].[55] But what is nothing is neither to be affirmed nor to be denied; and

55. That is to say, Buridan simply applies the following inference scheme: 'A is B; therefore, A is'.

that you are a donkey is not something unless you are a donkey; therefore, you are a donkey.

P.2 Again, you are something; therefore, everybody who says *that you are something* says something true; but everybody who says *that you are a donkey* says *that you are something;* therefore, everybody who says *that you are a donkey* says something true; and, consequently, you are a donkey.

P.3 Again, whoever says *that you are an animal* says something true; and whoever says *that you are a donkey* says *that you are an animal;* therefore, whoever says *that you are a donkey* says something true.

P.4 Again, I say *that you are a donkey;* therefore, it is either as I say, or otherwise than I say. If it is just as I say, then I have what I want to prove. If it is otherwise than I say, then I say something false; and otherwise than what is false is true; therefore, I say something true, and thus you are a donkey.

O.1 But you would concede the opposite.

Third sophism: [A] man is a species

P.1 This[56] is proved by the authority of Porphyry, who often says that man is a species and animal is a genus.

P.2 And it is also proved by the definition of species, for 'man' is predicated of several numerically different [things] in reply to the question 'What is it?' [*in eo quod quid est*], as [it is] of Socrates and Plato.

O.1 The opposite is argued, for its contradictory is true, namely, 'No man is a species', as is clear by induction, for Socrates is not a species; Plato is not a species; and so on for others; therefore, no man is a species.

But some people say that 'No man is a species' [*Nullus homo est species*] is not the contradictory of 'Man is a species', but rather it is 'Not: man is a species' [*Non homo est species*][57].

Contra: particular and indefinite propositions are judged in the same way; but 'No man is a species' contradicts the particular [proposition] 'Some man

56. *Homo est species.* The lack of articles renders this sentence ambiguous in Latin in a way that cannot be reflected in a similarly ambiguous English phrase. Buridan's solution will consist precisely in pointing out this ambiguity. In the translation of the initial arguments I will apply that unambiguous rendering of the ambiguous Latin that befits the intent of the actual argument.

57. That is, 'It is not the case that man is a species'.

is a species'; therefore, it contradicts the indefinite [proposition] 'Man is a species'.

Fourth sophism: [A] genus covers more than a most general genus

P.1 Proof:[58] that which is predicated of something else truly and universally and not convertibly [with it] covers more, or is more common—for example, 'animal' covers more than 'man': for it is true to say that every man is an animal; but it is not true to say conversely that every animal is a man. And 'genus' is universally predicated of a most general genus, but not convertibly. For example, every most general [genus] is a genus, but not every genus is a most general genus. Therefore, 'genus' covers more or is more common than the most general genus.

O.1 The opposite is argued: every genus is either a most general or a subaltern genus, but neither covers more than a most general genus; therefore, no genus covers more than a most general genus.

Fifth sophism: [A] name is trisyllabic

O.1 This sophism[59] is disproved, because although the previous ones are said to be defective because of the change of supposition from material to personal or conversely, now we assume that here there is no such change, but the whole proceeds in material supposition. And from this it is immediately apparent that the sophism is false, for 'name', i.e., the term 'name', is not trisyllabic.

P.1 But it is argued that the sophism is true, for *asinus* ['donkey'] is trisyllabic; and *asinus* is a name; therefore, etc. And it is obvious that the propositions are true taking the subject materially. And this is a valid expository

58. *Genus est in plus quam genus generalissimum.* The same goes for this sophism as for the previous one. See n. 56 above.

59. *Nomen est trisyllabum.* See again n. 56 above.

syllogism, for many people say that propositions in which the subject is taken materially are singular, and if they are not singular, then they become singular if we add a demonstrative pronoun, so as to assert: "This term 'asinus' is trisyllabic, and is a name; therefore, etc."

These sophisms are simple, but for their solution just a few things should be said about the supposition of terms, since we discussed this in more detail in the *Summulae*.[60]

I say, then, that I do not intend to speak about supposition as the grammarian does, namely, as when [a name in] the nominative [case] is said to be the suppositum with respect to a verb, because it determines [its] person [*reddit ei personam*].[61] For in this way the term 'chimera' supposits to the verb[62] 'runs' in the expression '[A] chimera runs'. But supposition in the logical sense is properly attributed to the subject or the predicate of a proposition, and sometimes, although less properly, even oblique terms that are parts of subjects or predicates are conceded to supposit. For supposition, as it is taken here, is the taking of a term in a proposition for some thing or things, so that when they are pointed out by the pronouns 'this' or 'these', or equivalent ones, the term is truly affirmed of the pronoun by means of the copula of the proposition. For example, in the proposition 'A horse runs' the term 'horse' supposits for every horse that exists, for of whichever is pointed out it would be true to say: 'This is a horse'. And in the proposition 'A horse ran' the term 'horse' supposits for every horse that exists or existed, because it would be true to say of every such, if it were pointed out: 'This is or was a horse'; and the same goes for the future. And I say disjunctively 'is or was', for although a verb of past or future tense ampliates supposition to past or future things, it does not eliminate supposition for present things. We should speak in a similar manner about possibility, for if I say 'A horse can walk', the term 'horse' supposits for every horse that exists or can exist, for, while pointing it out, it would be true to say: 'this is or can be a horse'.

In the same way, if a term does not supposit for one thing but for many things together, as when one says '[A] population is large', then the term 'population' supposits for those things of which, when pointed out together,

60. Apparently, Buridan treats the *Sophismata* as a separate work, distinct from the *Summulae,* despite what he said in the introduction of this treatise.

61. That is, the grammatical (first, second, or third) person.

62. When Buridan is talking about the grammatical notion of supposition, he uses the construction *(terminus) supponit verbo,* in contrast to the construction *(terminus) supponit pro aliquo,* which is meant to convey the logical notion of referring to a thing; it is this distinction that I meant to bring out by the difference between '[a term] supposits *to* the verb' and '[a term] supposits *for* something', respectively.

it would be true to say: 'These are a population'. But then if there were no such thing or things, then the term would supposit for nothing, as when the term 'chimera' does not supposit according to the logician, for nothing is, was, will be, or can be a chimera, and, likewise, no things are, were, will be, or can be a chimera. But how God or Aristotle or Antichrist can be pointed out was sufficiently explained in the *Summulae*.[63]

We should note that a term can supposit in two ways, namely, materially or personally. And I do not care whether this division is given in proper terms or not, for names signify by convention. So my only concern is to show what we should understand by the terms 'materially' and 'personally'. I say, therefore, as was explained in the *Summulae* in more detail,[64] that a term or just any utterance that can be put in a proposition supposits materially if in that proposition it is not taken for its ultimate significates or significate but for itself, or for a term similar to itself, as in "'Love' is a verb," for an utterance like 'love' is a verb.[65] The same goes for "'Man' is a species," that is to say, a term like 'man' is a species. Likewise, "'A man runs' is an expression," that is, an utterance or a concept like 'A man runs' is an expression. Similarly, "'ba' is a nonsignificative utterance." Similarly, "'if' is a conjunction," "'I' is a pronoun," etc. And it is in this way of suppositing that that-clauses [*orationes infinitivi modi*][66] often supposit, as in 'That a man lectures is true'. And such an expression supposits neither for itself nor for another similar one, but rather for a proposition that is similar in subject, predicate, and copula that, however, is formed without prefixing the conjunctive 'that',[67] as in the case of 'That Socrates runs is true', or 'That Socrates runs is an affirmative proposition', i.e., a proposition like 'Socrates runs' is an affirmative, true proposition.

Sometimes, however, an expression like this supposits personally and is taken significatively whether it supposits or not, as when I say 'That a man is white is that a man is colored' ['For a man to be white is for a man to be colored' or 'A man's being white is a man's being colored'], 'That something

63. See 4.3.4.

64. See 4.3.2.

65. Of course, in English, the utterance 'love' may also be a noun. This only goes to show, as far as Buridan is concerned, that equivocation has some effect also on material supposition.

66. Following the policy outlined in the introduction, I am rendering accusative with infinitive constructions consistently by that-clauses.

67. *Excepta variatione subiecti et praedicati penes nominativum et accusativum, et variatione verbi penes infinitivum et indicativum modum.* Obviously, instead of translating this remark concerning accusative with infinitive constructions in Latin, I had to provide the corresponding remark concerning the English construction.

cuts is that something acts' ['(For something) to cut is (for something) to act', etc.], 'That something is cut is that something is acted on' ['(For something) to be cut is (for something) to be acted on']. And then, as I explained elsewhere,[68] these expressions signify so that 'To cut is to act' [signifies the same as] '[Something] cutting is [something] acting'; and the expression 'For a man to be white is for a man to be colored', [the same] as the expression 'A white man is a colored man'. In general, just as it is true to say that to generate is [the thing] generating, so to be generated is what is generated, to be white is [something] white, and so on for the other cases. Therefore, even as 'chimera' and 'to be a chimera' [or 'that (something) is a chimera'] signify the same thing or things, but without the term supposing for anything, so also it is not true to say that 'To be a chimera is a chimera', just as it is not true to say that a chimera is a chimera.

Now, then, the sophisms are solved on the grounds that an argumentative process is not valid in which the supposition of a term is changed from material to personal or significative.

Replies to the sophisms

TO THE FIRST SOPHISM [THAT GOD IS UNJUST IS TO BE DENIED BY ALL THE FAITHFUL]

Thus to the first sophism I reply by making the distinction that the expression 'That God is unjust' in this sophism can be taken materially, and in this way it supposits for the proposition 'God is unjust'. And thus it is conceded that *that God is unjust* is a false proposition, impossible, to be denied, and heretical, i.e., [a proposition] that renders the person who would assent to it a heretic. In the other way it can be taken significatively, and then in the sophism the utterance 'That God is unjust', although it has supposition according to the grammarian, nevertheless, it does not do so in the logical sense of 'supposition', since *that God is unjust is* nothing, for no thing is an unjust God. Therefore, in this way 'That God is unjust is to be denied' is false, as the argument correctly maintained.

68. See 4.3.2.

TO THE SECOND SOPHISM [YOU ARE A DONKEY]

P.1 [In reply] to the second sophism, I deny *that you are a donkey.* And when it is said '*That you are a donkey* is to be denied by you', I concede this if the subject 'That you are a donkey' supposits materially, for in this way [what this subject supposits for] is a false proposition. But if [the subject] is taken significatively, then *that you are a donkey* is nothing; therefore, it is neither to be denied nor to be conceded.

P.2 To the other objection I reply in a similar manner that nobody can say *that you are a donkey* if the expression 'that you are a donkey' is taken significatively. But if it is taken materially, then someone can indeed say *that you are a donkey,* i.e., he utters the proposition 'You are a donkey', which is false. But then, when it is said: 'Whoever says *that you are a donkey* says that you are something', I deny this, for the sense is, speaking materially, that whoever says the proposition 'You are a donkey' says this: 'You are something', and this is false. And if someone says both significatively, he says something true, insofar as he says the second, but not insofar as he says the first.

P.3 In the same way, I reply to the third objection: for I say that nobody can say *that you are an animal,* speaking significatively, since *that you are an animal* is you, and nobody can say you or me or a horse or an ox—for we say only utterances. But if you were to speak materially, then the following is false: 'Whoever says *that you are a donkey* says *that you are an animal*', for I can say one without saying the other.

P.4 To the last case, I concede that I say *that you are a donkey,* speaking materially, if I utter the proposition 'You are a donkey'. And when it is further added 'either it is just as I say or it is otherwise than I say', I reply that what you say is, and it is just as you say, and even where and when you say, there and then it is; nevertheless, what you say is a false proposition. But perhaps you meant to ask whether the thing signified is in the way that your proposition signifies, in which case this was discussed in the previous chapter.

TO THE THIRD SOPHISM [(A) MAN IS A SPECIES]

To the third sophism one can respond that the sophism is false, for in accordance with their proper usage [*de proprietate sermonis*], propositions should be understood so that their terms or expressions are taken significatively. But in order that we may more clearly see the defect, we may make a distinction by

saying that the sophism is true, taking the term 'man' materially, but it is false, taking [the term] personally or significatively.

But perhaps you might ask what the contradictory of '[A] man is a species' is, insofar as the term 'man' supposits materially. But I say that its contradictory is 'Not:[a] man is a species', also taking 'man' materially. You, however, might say: But this is equivalent to 'No man is a species', isn't it? I say that it indeed is, still taking 'man' materially, which would be to say, "No term 'man' is a species," and then it is false. And your induction was not valid, for you ought to have made the induction saying that this term 'man' is not a species, and neither is that term 'man' a species, and so on for the others.

TO THE FOURTH SOPHISM [(A) GENUS COVERS MORE THAN A MOST GENERAL GENUS]

To the fourth sophism we have to reply that the following is false in terms of personal supposition: '[A] genus covers more or is more common than a most general genus'. But in terms of material supposition it is true that the term 'genus' covers more or is more common than the term 'most general [genus]', and this is how the arguments proceeded.

TO THE FIFTH SOPHISM [(A) NAME IS TRISYLLABIC]

[In response] to the last sophism, I deny that [a] 'name' is trisyllabic, taking the term 'name' materially. And when you prove that the term *'asinus'* is trisyllabic, and it is a name, I concede these premises, taking the terms 'trisyllabic' and 'name' personally. Therefore, it could also be correctly concluded that a name is trisyllabic, taking 'name' as before, namely, personally. But the consequence is not valid taking it materially, for it was not taken in this way in the premises insofar as they were true.

After dividing supposition or the acceptation of terms or expressions into significative and material, there remains the division of personal or significative supposition into common and discrete, and of common supposition into confused and determinate, and of confused supposition into distributive and nondistributive. From [these divisions] there arise sophisms involving some obscurity. Therefore we propound some sophisms in connection with them.

Sixth sophism: There always was some man

P.1 Proof: today there was some man; yesterday there was some man; and the day before yesterday; and so on for all other times; therefore, there always was some man.

P.1.1 The consequence is clear by induction or by the locus from the sufficiently enumerated parts of the whole-in-quantity or the whole-in-time to their whole.

O.1 The opposite is argued: for nothing that is or was generated or created was always, but every man was generated or created; therefore, no man was always.

Seventh sophism: Some donkey every man sees

Let it be assumed that there are only three men, namely, Socrates, Plato and John, and that each of them has a donkey that he sees, and that none of these men sees the donkey of the other.

P.1 Then the sophism is obvious. For some donkey Socrates sees, some donkey Plato sees, and some donkey also John sees, and there are no more people; therefore, some donkey every man sees.

O.1 The opposite is argued: neither this donkey every man sees, nor that donkey every man sees, [etc.]; and there are no more donkeys; therefore no donkey [is such that] every man sees [it]; and this contradicts the sophism; therefore, the sophism was false.

Eighth sophism: Every man is an animal

P.1 Proof: the definition of animal applies to every man. For every man is an animated sensitive substance.

O.1 Disproof: 'Every man is an animal' implies something false; therefore, it is false.

O.1.1 I prove the antecedent: for by conversion it follows that if every man is an animal, then every animal is a man. But this consequent is false.

O.1.1.1 I prove, therefore, that 'Every man is an animal' has to be converted

into 'Every animal is a man': for just as an affirmative is to an affirmative, so is a negative to a negative; and just as a particular is to a particular, so is a universal to a universal, as is clear by the appropriate analogy. But a universal negative is converted into a universal negative; and a particular affirmative is converted into a particular affirmative; therefore, in a similar manner, a universal [is converted] into a universal. And this is confirmed thus: an affirmative is more powerful and stronger than a negative. And it is from this point that Aristotle concludes in the *Posterior Analytics* that an affirmative demonstration is more powerful than a negative demonstration.[69] Therefore, if a universal negative can imply a universal negative, then it would seem that a universal affirmative can even more strongly imply a universal affirmative.

O.2 Again, I prove that 'Every man is animal' entails something false: for it entails 'This man is an animal', by the locus from the whole-in-quantity to its part; but in a possible case 'This man is an animal' is false, provided that by the demonstrative pronoun I point out a stone.

Ninth sophism: Every man an animal is not

P.1 Proof:[70] Socrates is not an animal that is Plato;[71] therefore, Socrates an animal is not;[72] and similarly Plato is not an animal that is Socrates; there-

69. Aristotle, *Posterior Analytics* I.25.86a31–86b39.

70. *Omnis homo animal non est.* A smoother rendering of this sentence in its intended meaning would be 'Every man is such that an animal is not identical with him', but this would make Buridan's subsequent syntactic considerations unintelligible. The point, as we shall see, is that since in this sentence the predicate precedes the negation, it stands undistributed, whereas in the usual word order, as in 'A man is not an animal', the negation distributes the predicate.

71. *Socrates animal quod est Plato non est.* I have changed the word order for the sake of smoother reading in English. The reason why word order makes no logical difference in this case is that the restrictive relative clause 'that is Plato' added to 'animal' makes the whole complex predicate term 'animal that is Plato' into a singular term, which cannot be distributed anyway, whether it follows or precedes the negation. A more literal translation would be 'Socrates an animal that is Plato is not'.

72. In this case I had to retain the original word order so that the sentence will have the import of 'Socrates is such that some animal is not identical with him', which is true if there is another animal besides Socrates. On the other hand, with the usual word order, the sentence 'Socrates is not an animal' would be false even in this case, since this would have the import of 'Socrates is identical with no animal'.

fore, Plato an animal is not; and so on for the others; therefore, every man an animal is not.

O.1 The opposite is argued. The following are contraries: 'Every man an animal is' and 'Every man an animal is not', for they are a universal affirmative and a universal negative; but 'Every man an animal is' is true; therefore, by the law of contraries 'Every man an animal is not' is false.

O.2 Again, its equivalent is false; therefore, it is false.

O.2.1 Proof of the antecedent: this is its equivalent: 'No man an animal is', for 'Every . . . not' and 'No . . .' are equivalent.

Because of these sophisms we need to recall that in the *Summulae* we said that terms taken personally or significatively have two kinds of supposition, namely, discrete and common.[73] Furthermore, common supposition has two kinds, namely, distributive and nondistributive or indefinite. Furthermore, nondistributive or indefinite supposition has two kinds, determinate and merely confused. These points are assumed as being established elsewhere.

Next, we should note, as I said in my *Treatise on Consequences,*[74] that every proposition that has some distributed term entails a proposition that has that term nondistributed, others remaining the same; but the nondistributed does not entail the distributed. For example, this is valid: 'every . . .; therefore, some . . .'; but this is not: 'some . . .; therefore, every . . .'. Similarly, this is valid on the negative side: 'Nobody runs; therefore, somebody does not run'; but this is not: 'somebody does not run; therefore, nobody runs'.

Furthermore, as explained in the same place,[75] a proposition in which a term supposits merely confusedly because of the distribution of the preceding term never entails another proposition in which the same term supposits determinately, unless the distribution is removed. But if the distribution is removed, then the consequence is valid. For it does not follow that 'Every man is an animal; therefore, an animal is every man'; but it does follow that 'therefore; an animal is a man'. But determinate supposition correctly entails confused supposition. For the following is a valid consequence: '[An] A is every B; therefore, every B is [an] A'. And the reasons justifying these were given in that treatise. It is clear, then, that changing supposition from nondistributive to distributive invalidates a consequence, and similarly, changing supposition from merely confused to determinate does so too, unless the distribution that was the cause of the confusion is removed.

And on this basis it is easy to respond to the sophisms.

73. See 4.3.3.

74. J. Buridan, *Tractatus de Consequentiis,* ed. H. Hubien (Louvain: Publications universitaires, 1976), I, chap. 8, concl. 10, p. 41.

75. Ibid., concl. 11, p. 41.

Replies to the sophisms

TO THE SIXTH SOPHISM [THERE WAS ALWAYS SOME MAN]

[In reply] to the first sophism, which was the sixth in this chapter, it would be conceded—if the world were eternal, as Aristotle seems to have held—that the sophism is true, namely, that there always was some man, as the argument correctly proved. And along with this it is also conceded that no man was always, as the argument proves. But these are not incompatible, although the following are: 'No man was always' and 'Some man was always'; but the latter does not follow from 'There always was some man', for then merely confused supposition would be changed into determinate.[76]

TO THE SEVENTH SOPHISM [SOME DONKEY EVERY MAN SEES]

[In reply] to the seventh sophism I say that this is false in the case posited: 'Some donkey every man sees', but this would be true: 'Every man sees some donkey'. For they differ because in the first 'donkey' stands determinately, and in the second merely confusedly. Nor was the induction strong enough to prove it, for one should not infer a common distributed term from singulars, unless by that distribution other common terms are confused, if there are others. And for this reason the induction is not valid on the part of the predicate, as in this case: 'This man is Socrates; this man is Plato; and so on for the singulars; therefore, a man is every man'; rather one has to conclude: 'therefore, every man is a man'.

76. What Buridan is pointing out here amounts to what in quantification theory we would point out by asserting that the following inference is invalid (because it involves what came to be known as the quantifier-shift fallacy): $(\forall t)(\exists x)(Mx \,\&\, Ext) \rightarrow (\exists x)(\forall t)(Mx \,\&\, Ext)$, where Mx and Ext represent 'x is a man' and 'x exists at a past time t', respectively. (A simple informal example of the same fallacy is the following: 'Every boy kissed a girl; therefore, a girl was kissed by every boy'.) In general, whenever Buridan points out that an inference is invalid because of a shift from confused to determinate supposition, he refers to the phenomenon that in quantification theory we would describe as an instance of the quantifier-shift fallacy. In the translation I provided this interpretation (making reference to the latter sentence, despite the critical text's reference to *prima,* i.e., the first), for this is the doctrinally coherent reading.

TO THE EIGHTH SOPHISM [EVERY MAN IS AN ANIMAL]

To the eighth sophism we have to reply that this is true: 'Every man is an animal'; and it does not entail something false, nor is this a valid conversion: 'Every man is an animal; therefore, every animal is a man', for it proceeds from the term 'animal', nondistributed, to the same distributed.

O.1.1.1 And that analogy is not valid, for the others are not equal, since the conversion of a universal negative does not change the supposition of any term, whereas the conversion of a universal affirmative into a universal affirmative would change the supposition of one term from nondistributed to distributed supposition. Likewise, the other motivation is not valid either, for, although an affirmative is more powerful in that it is possible to construct a syllogism from affirmatives only but not from negatives only, still, nothing is sufficient to conclude [to anything] where a term's supposition is changed from nondistributed to distributed.

O.2 To the last one it is replied that it is not a valid formal consequence [that involves proceeding] from a distributed common term to a singular term, except with the assumption that the singular term supposits for something for which the common term supposits.

TO THE NINTH SOPHISM [EVERY MAN AN ANIMAL IS NOT]

To the ninth, I concede that every man an animal is not. And I say that 'Every man an animal is' is not its contrary; indeed, they both are true. For the negative [proposition] of the [two] contraries has to have both the subject and the predicate distributed; thus these two are indeed contraries: 'Every man is an animal' and 'Every man is no animal'.

But then you might say: since 'Every man an animal is not' is a universal negative, provide me with an affirmative that is its contrary.

I respond that it has no contrary, unless, perhaps, this: 'Every man is every animal'. For in one of the contraries the predicate has to be distributed. But neither do I say that that is the true contrary, for it does not have the same predicate because of the sign that appears in the predicate and that is an integral part of the predicate. Similarly, we should say that these are not equivalent: 'Every man an animal is not' and 'No man an animal is', the reason being that 'animal' is distributed in the one and not distributed in the other.

Chapter 4: On appellation

The fourth chapter will be about appellation, and some sophisms are to be constructed.

First Part
First sophism: Socrates and a white [thing] are the same

Let it be assumed that today Socrates is white, and tomorrow he will not be white but black.

P.1 The sophism is proved thus: pointing to Socrates, this is true: 'This is Socrates, and this is the same as a white [thing]; therefore, the same thing is Socrates and a white thing'; from which it follows by conversion that Socrates and a white thing are the same. And this was the sophism.

O.1 The opposite is argued: they are not the same of which one will remain tomorrow though the other does not remain; but tomorrow Socrates will remain, and there will not remain the white thing;[77] therefore, etc.

Or thus: as long as Socrates will be, there will be everything that is the same as Socrates; but Socrates will be tomorrow, and there will not be the white thing;[78] therefore, Socrates is not the same as a white thing.

O.2 Again, Socrates and the white thing are no more the same than are action and passion or motion and time, but in bk. 3 of the *Physics* it is said that strictly speaking learning is not the same as teaching, and action is not the same as passion, but rather that to which these changes pertain [is the same],[79] and in bk. 4 he concludes that it is clear that time is not change, nor is it without change.[80]

O.2 Again, Socrates does not differ less from the white thing than does Socrates from himself while doing something or being at rest. But Porphyry says that Socrates differs from himself while doing something or being at rest;[81] therefore, etc.

77. Reading *album* for the *albus* of the text, i.e., instead of saying: 'and he will not remain white', which would weaken the argument.

78. Reading *album* for *albus,* i.e., instead of saying: 'and he will not be white'.

79. Aristotle, *Physics* III.3.202a31–202b22.

80. Ibid., IV.11.219a1–2.

81. Porphyry, *Isagoge* 8.10–12.

O.4 Again, that he is white accidentally pertains to Socrates; but nothing accidentally pertains to itself; therefore, etc.

Second sophism: Today you ate raw [meat]

[The case] is posited that yesterday you bought a piece of raw meat, and today you ate it well-cooked.

P.1 Then we argue thus: whatever you bought yesterday is what you ate today; but yesterday you bought raw [meat]; therefore, today you ate raw [meat].

O.2 Contra: whatever you ate today is what you ate well-cooked, according to the case; therefore, you did not eat raw [meat].

Third sophism: Something white will be black

The case is posited that this piece of wood is now white, and tomorrow it will be black.

P.1 Then we argue using an expository syllogism: this piece of wood will be black; and this piece of wood is white; therefore, a white thing will be black.

O.1 The opposite is argued: a proposition in the future tense is not true if the corresponding present tense proposition never will be true. For example, if 'Antichrist will preach' is true, then it follows that 'Antichrist preaches' sometime will be true; and 'Aristotle disputed' is not true unless 'Aristotle disputes' sometime was true, and so on for other cases. But 'A white thing is black' was never true, nor will it ever be true; therefore, a white thing was not black and a white thing will not be black.

And the case is similar with the sophism 'A white thing can be black'.

P.1 For it is argued that the sophism is true because this piece of wood can be black, since tomorrow it will be black; therefore, something white can be black.

O.1 Contra: from positing something possible in actuality nothing impossible should follow; but [here] something impossible follows, namely, positing that something white is black; therefore, it is not true that something white can be black.

O.2 Again, a proposition about impossibility contradicts a proposition about possibility. But 'That something white is black is impossible' is true; therefore, 'Something white is possibly black' is false; this, however, is equivalent to 'Something white can be black'.

Fourth sophism: An old man will be a boy

P.1 Proof: this is equivalent to 'He who is or will be an old man will be a boy', and this is true for Antichrist.

O.1 The opposite is argued by induction: this old man will not be a boy, nor this, nor this, and so on for [each] single one—for this is true whichever old man is pointed out—therefore, no old man will be a boy.

O.2 Again, one can argue just as was argued in the preceding sophism, concerning possibility as well as the future.

Fifth sophism: Socrates will be running tomorrow

P.1 The sophism is clear, positing the case that he will run tomorrow: for 'will run' is resolved into 'will be running' if we wish to make explicit the copula outside the predicate.

O.1 The opposite is argued: if a proposition in the future tense is true, then, as has been laid down, there has to correspond to it a true present-tense proposition in the future, retaining the predicate in its appropriate form, although not the subject, because the predicate always appellates its own form; but it will never be true to say: *'Socrates runs tomorrow' or *'A man runs tomorrow', whoever is pointed out; therefore, etc.

The case would be similar with the sophism 'Socrates disputed last year'; for it would never be true to say that *'Socrates disputes last year'.[82]

82. The asterisk (*) in front of the previous phrases indicates that they are not well-formed sentences, which is precisely the point Buridan intends to bring out.

Sixth sophism: I saw Peter and Robert

Let us posit the case that I saw Peter yesterday and Robert the day before yesterday. And then the sophism is clear by this case.

O.1 But against this, on the assumption that I never saw them at the same time, it follows that it was never true to say in the present tense that I see Peter and Robert.

The same goes for the sophism 'I will see every star', assuming that I will remain under the equinox.

P.1 The sophism is proved by induction concerning every star: for whichever star I do not see in the summer I will see in the winter, and conversely.

O.1 The opposite is argued as before: for it will never be true to say that I see every star.

ON THE APPELLATION OF TERMS

For the solution of sophisms of this kind a few remarks need to be made about appellation; a fuller discussion may be found in the discussion provided in the *Summulae*.[83]

First, we should realize that a term that is apt to supposit for something should appellate everything that it signifies or consignifies besides what it supposits for, unless it is restricted, as has been said elsewhere. For example, 'white [thing]', suppositing for a man, appellates [a] whiteness, and 'large [thing]' [appellates a] largeness, and 'father' [appellates a] past [act of] begetting and another [person] whom the father begot, and 'distant [thing]' [appellates] the other thing from which this one stands apart and the intervening space by which it stands apart, and '[a] being [that is] somewhere', suppositing for Socrates, appellates a place, and so on for others.

Second, we should note that a term appellates that which it appellates as somehow pertaining or nonpertaining to the thing for which it supposits or for which it is apt to supposit. I say 'as pertaining' if it appellates it positively, and I say 'as nonpertaining' if it appellates it privatively, just as 'white [thing]' appellates [a] whiteness positively, as inherent in the thing that is white, and 'father' [appellates] the past [act of] begetting as that by which he begot, and the other [person] as whom he begot; and 'wealthy' appellates the external goods as ones that he who is wealthy possesses. But 'blind' suppositing for an eye appellates sight privatively, as nonpertaining to the eye, and 'poor' appel-

83. See 4.5.

lates external goods as nonpertaining to [the poor person], namely, insofar as he is not possessing them.

Third, we should note that the diverse modes of predication arise from the diverse positive modes of how the things appellated pertain to the things for which the terms supposit, as in response to the question 'What is it like?' [*in quale*] or in response to the question 'How much is it?' [*in quantum*], 'Where is it?' [*in ubi*], 'How is this related to that?' [*in quomodo se habet hoc ad illud*], etc. And it is from these diverse modes of predication that the diverse categories are derived, as should be seen in the commentary on the *Categories.*[84] For example, the terms 'white' and 'black' connote qualities of the substances for which they supposit, and it is on account of these [qualities] that [the substances] are said to be such and such; again, the terms 'two cubits long' and 'three cubits long' [connote] the quantities [of substances] by which they are measurable. But it is in accordance with another mode of pertaining to [*adiacentia*], or relation [*habitudo*], that terms from the category of time [*quando*—When?], such as 'today' or 'tomorrow', appellate the motion of the heavens around the things of which we say that they are today or will be tomorrow, and so on for the other cases.

Fourth, we should note that appellative terms appellate differently with respect to verbs in the present or the future tense, or with respect to the verb 'can' or 'possibly is': for with respect to a present-tense verb, if there are no ampliative terms, the appellative term, whether it is in the subject or in the predicate, appellates its thing as presently pertaining to what the term is apt to supposit for and as pertaining according to the mode of pertinence [*adiacentia*] according to which it appellates it. And under these circumstances this term supposits for all and only those things to which such an appellated thing pertains in this manner. Therefore, if such a term supposits for some things, it does not cease to supposit for them merely on account of their destruction or annihilation, but also on account of the removal of the appellated things or of their mode of pertinence, as when the term 'shod' supposits for you but would cease to supposit for you if your shoes were removed from you.

But where other verbs are concerned, the subject and the predicate appellate differently. For the predicate appellates its thing only for the time of the verb,[85] however much the time of the verb has been restricted; and if the mode

84. See J. Buridan, *Quaestiones in Praedicamenta,* ed. J. Schneider (Munich: Verlag der Bayerische Akademie der Wissenschaft, 1983), q. 3, pp. 14–29; 3.1.8 above.

85. Although in many cases the phrase *tempus verbi* can be quite smoothly translated by 'tense', in this context, in which Buridan is going to talk about the restriction of the time connoted by the verb, I would rather refrain from this "smooth" but somewhat misleading translation.

of pertinence of the appellated thing to the thing for which the term is apt to supposit does not correspond for that time [to the mode in which it is appellated], then it does not supposit for that thing, even if the mode of pertinence did in fact correspond for the present time. For example, if I say: 'Socrates was white yesterday', then in this proposition the term 'white' does not supposit for Socrates, unless whiteness pertained to him yesterday, even though it pertains to him today and had pertained to him before [yesterday], and thus the proposition would be false.

But the subject appellates its thing indifferently, in a disjunctive manner, covering the present time and the time of the verb, and this is also the case with supposition. Therefore, 'A white [thing] yesterday was black' is true if whiteness now pertains to the thing that yesterday was black, even if yesterday it did not pertain to it. And for this reason 'A white [thing] yesterday was black' is analyzed as: 'What is white or yesterday was white was black yesterday'. And we should analogously declare the same about the future as we declare with respect to the past.

And from these [considerations] there follows an important point: it is not required for the truth of a past- or future-tense proposition in which the subject is appellative that the corresponding proposition in the present tense be true sometime in the future. This is so, even assuming that such a proposition will always exist in the future. Here by "corresponding proposition" I mean one that has the same subject and predicate, for although '[A] white [thing] will be black' is true, because it is equivalent to the true [proposition] 'What is or will be white will be black', nevertheless, '[A] white [thing] is black' will never be true, even if it should be uttered. But in reducing a future-tense proposition to a present-tense proposition, it is necessary to remove the appellation from the subject of the proposition and it is necessary to change the appellative subject into a nonappellative subject that supposits for what the appellative subject supposited for and with respect to which the proposition was true; as when, pointing to [that thing], we were to change the subject into the pronoun 'this', and say 'This is white', and then it is necessary that, if the future-tense proposition was true, then a present-tense proposition of that sort will be true sometime.

But this is not the case with an appellative predicate. For in such a reduction it ought to remain in its proper form as far as appellation is concerned. And the reason for this diversity, as has been said, is that the predicate appellates its thing for the time of the verb both determinately and precisely. Therefore, when the time for which the future-tense proposition was true comes along the appellated thing has to pertain; therefore, the present-tense proposition has then to be true with respect to that appellation; and thus, that appellative term has to remain. But the subject does not appellate its thing in this way, that

is, precisely for the time of the verb, but disjunctively with the present; therefore, it is sufficient that the appellated thing pertain to the thing for which the subject supposits at the time when the future-tense proposition is propounded, and it is not necessary that it pertain to it at the time at which the present-tense proposition will be true; therefore, in that present-tense proposition the appellation need not remain. And this is what accounts for the truth of the propositions that a white [thing] will be when it will not be white, and that Robert's horse will be when it will not be Robert's horse. For the term 'Robert's horse' supposits for a horse and appellates Robert as its owner.

And this is what we should understand by that common dictum: 'the predicate appellates its form, and the subject does not'. For this is not true, properly speaking; on the contrary, the subject, if it is an appellative term, always appellates its form. But that dictum is propounded in the sense that the subject does not have to appellate its proper form determinately and precisely for the time of the verb, if the verb is in the past or future tense, or also when the verb is 'can' or 'possibly is'. Therefore, in positing [the proposition] into actuality [86] the predicate but not the subject should remain with its appellation.

We should also note that if the subject is not appellative, then it need not be changed when reducing a proposition about the past or about the future or about possibility into a present-tense proposition about actuality, except that, if the proposition is universal, the reduction need not take place by means of a universal present-tense proposition about actuality, but a reduction in terms of singulars suffices. For example, although it is true that every horse will die, nevertheless, it does not have to be at some time true that every horse dies, but it is true that whichever horse you point out, whether present or future, a proposition such as this is true: 'This dies', and also 'This dies', and so on for [each] singular.

But there are doubts concerning what has been said, for this is true: 'Socrates will run tomorrow', but this will never be true: *'Socrates runs tomorrow';[87] also, this is true: 'Socrates was in Paris last year', but it was never true to say: *'Socrates is in Paris last year'. Similarly, it is true that I saw John and Robert, positing the case that I saw John yesterday and [I saw] Robert the day before yesterday and at no other time, yet, in this case it would never have been true to say: 'I see John and Robert'. Similarly, I can see every star, never-

86. *In ponendo in esse.* This phrase refers back to the Aristotelian definition of possibility as that from which, if it is posited into actuality, nothing impossible follows, that is to say, the modal proposition expressing this possibility transformed into an assertoric proposition does not entail an impossible proposition. In fact, this is just another way of putting the familiar modal thesis: $(p \rightarrow q) \rightarrow Mp \rightarrow Mq$.

87. Here, as elsewhere in this translation, the asterisk indicates ungrammaticality.

theless, this never can be true in accordance with nature: 'I see every star', and so on for many other cases in connection with which several sophisms could be formed.

And it seems to me that we should respond to these objections.

First, to the first two, that just as in reducing a past- or future-tense proposition to a present tense proposition the signification of past or future is to be removed, so too any determination of past or future is to be removed, in whichever part of the proposition it was placed, as in the cases of the terms 'yesterday', 'tomorrow', 'last year', 'some time ago', 'a long time ago', etc. And this solves some of the sophisms presented above.

Next, as to the other two objections, it seems to me that it should be said that the term 'every' is not properly called appellative: for it is not categorematic, nor does it signify or appellate anything outside the mind over and above the significations and appellations of categorematic terms; rather, it only signifies in the mind a mode of conceiving things such that their concept supposits for these things distributively. Therefore, in reducing propositions about the past, future, or possibility to propositions about the present and about actuality, such distributive signs need not remain, whether in the subjects or in the predicates, but it is sufficient to reduce the whole in both cases in terms of singular [propositions]. And this is also sufficient where conjunctive subjects or predicates are concerned. For the reduction with respect to any of the conjoined elements concerned is sufficient, given that the conjunction neither signifies nor appellates anything further. And thus the sophisms are solved. But many people say, and very commonly, that in this reduction to a proposition about actuality and the present, whatever follows the verb has to remain in a similar form; and thus they say that we should concede 'John and Robert I saw', but not 'I saw John and Robert'. Likewise, it should be conceded that yesterday I walked and tomorrow I will walk, but not these: 'I walked yesterday', or 'I will walk tomorrow'; nor this: 'Tomorrow will be the day [which is] tomorrow', but this: 'tomorrow the day [which is] tomorrow will be', and so on for other such cases. But either of these ways of speaking is acceptable and would be difficult to eliminate, for perhaps the controversy arises from the different conventional uses of utterances. Still, I am more inclined to accept the first way.

Therefore, we should solve the previously presented sophisms in proper form.

Replies to the sophisms

TO THE FIRST SOPHISM [SOCRATES AND A WHITE (THING) ARE THE SAME]

To the first sophism I reply that it is true. For Socrates and [a] white [thing] are the same. But in the first argument to the contrary some difficulties are involved.

The first is whether certain diverse things are the same. And my answer is yes. For parts that are diverse from each other are the whole, which is one and the same as itself. But no diverse things are the same as each other in the sense that one is the same as the other.

The second doubt is whether, given that Socrates is the same as [a] white [thing], this is to be conceded: 'Socrates and [a] white [thing] are'. And on account of the subject matter, I say that it must be conceded that they are, and indeed, that they are also beings, for Socrates is beings, for he is his parts. But in the case of things that do not have parts this is doubtful, for example, whether God and the First Cause are. And I say that they are and that they rule the world; however, they neither are some things, nor are they rulers of the world, but they are something and are the ruler of the world. For the plural number consignified by the verb is uttered so as to correspond to the plurality of the names that provide the person of the verb, and those names need not supposit for several things.[88]

The third doubt is whether some things are identical with each other. And this seems to be so: for Socrates and [a] white [thing] are identical with each

88. The following is a comment Buridan received from my student, Daniel Moloney, who has kindly helped me in the arduous task of proofreading: "So if I am referred to by many names, is it appropriate to say 'Dan and Gyula's student are'? Does it follow that 'We are typing this annotation'? This would not only give anybody a chance to put on royal airs by speaking with the royal 'We', but it also seems to indicate a drastic multiplication of entities by the multiplication of their names, doesn't it? Grammatical plurals ought to coincide with real plurals, oughtn't they? This strikes me as a weird convention to admit to." In Buridan's defense, for want of a better advocate, I would reply that *nomina sunt ad placitum,* which, in the case of number agreement between noun and verb, is best illustrated by a "weird convention" of English: the apparently singular 'sheep', 'deer', 'police', etc. require a plural verb, but the apparently plural 'news' requires a singular verb. In any case, although it does follow according to Buridan's rule that Dan and Gyula's student are typing this annotation, this still does not entail that there are several persons typing this annotation, since Dan and Gyula's student are the one person who is typing this annotation.

other—since Socrates is identical with [a] white thing and [a] white thing is identical with Socrates.

I reply that it is never the case that some things are identical with each other. Neither is the foregoing argument valid, since Socrates and [a] white [thing] are some thing and not some things, except insofar as some thing is some things, namely, as the whole is its parts. But this will be discussed elsewhere, as far as the use of the relative pronoun 'each other' is concerned. Nevertheless, it is indeed true that some things are truly said to be identical with each other, as in the cases of the terms 'Socrates' and '[a] white [thing]', or the terms 'God' and 'First Cause'. And I say that they are not identical with each other but are *said to be* identical with each other, that is to say, the predicate 'identical' is truly predicated of them taken significatively by the mediation of the verb 'are'. For it is true to say that Socrates and [a] white [thing] are identical and that God and the First Cause are identical.

O.1 Now, then, I respond directly to the argument.

When it is said that things are not identical with each other of which one will remain tomorrow though the other will not, I concede it. And when it is said that Socrates will remain tomorrow, this I concede. And when you say that there will not remain [the] white [thing], this I also concede, but still [the] white [thing] will remain.[89] Similarly, I concede that as long as Socrates will be, there will also be everything that is identical with Socrates, and I concede that tomorrow there will be Socrates; and so tomorrow there will be that which is [the] white [thing], but it will not be [a] white [thing].

O.2 To the other argument I reply that action and passion are the same and that motion and time are the same. And I say that Aristotle, in saying that these are not the same, merely meant that these names are not said to be the same, i.e., one is not predicated of the other by quidditative predication but rather by denominative predication; and this has to be looked at in more detail in bk. 3 of the *Physics*.[90]

O.3 To the further argument I reply that the following is false in its literal sense [*de virtute sermonis*]: 'Socrates doing something differs from himself at

89. Of course, here we are supposed to see the difference in the appellation of the term 'white' as it precedes or follows the verb. When we say: 'The white thing will remain', this—being equivalent to 'That which is or will be white will remain'—is true, even if what is now white will not remain white. But when we say: 'There will remain the white thing', this cannot be true unless the thing that is now white will remain white—at least according to Buridan's strict interpretation of the logical import of word order here, according to which the appellative term 'white' should appellate whiteness strictly for the time consignified by the verb, since it follows the verb.

90. Aristotle, *Physics* III.3.202a31–202b22.

rest'. Indeed, neither is Socrates-at-rest other than [what] used to be Socrates-doing-something or [Socrates]-running. But the dictum of Porphyry,[91] or of Aristotle, should be understood in the sense that Socrates is otherwise when he is at rest than he was when he moved, or at least he is not in the same way.[92]

O.4 To the last argument I reply that, taking the whole significatively, the following is false: 'That he is white accidentally pertains to Socrates'; for Socrates and that he is white are the same. But this proposition is conceded in the sense of material supposition, namely, in the sense that the proposition 'Socrates is white' is accidentally true, or in the sense that the predicate 'white' is predicated of the subject 'Socrates' *per accidens,* i.e., denominatively and not quidditatively.

TO THE SECOND SOPHISM [TODAY YOU ATE RAW (MEAT)]

My response to the second sophism is that it is false. And when it is said that whatever you bought yesterday you ate today, this, perhaps, can be denied: for you not only bought the substance of the [meat] but also the accidents inhering in it. And thus I bought rawness that I do not eat, and it is certain that something from the substance of the [meat] has evaporated and disappeared; therefore, in the above-described case I do not eat whatever I bought.

But if the major is accepted, then also the minor is to be conceded, namely, that I bought raw [meat]. But it does not follow that 'therefore, I eat raw [meat]', nor does it follow that 'therefore, [it is] raw [meat] I eat'. And the reason for this is that you proceed from a more ample supposition or appellation to a less ample one without distribution, and we have said elsewhere that this is not a valid move.[93] Therefore, that this is so I now clarify in the following way: in the minor proposition 'Raw [meat] you bought', the term 'raw [meat]' appellates rawness indifferently under disjunction for the present or past time, and in the conclusion, when I say: 'I eat raw [meat]', then 'raw [meat]' appellates rawness only for the present; therefore, it does not supposit for that to which rawness pertained, unless it still pertains to it at the present time.

91. Porphyry, *Isagoge, translatio Boethii,* ed. L. Minio-Paluello (Bruges: Desclée and De Brouwer, 1966), 8, 10–12.

92. Apparently, the reason for this addition is to accommodate the possibility that rest is simply a privation of motion, not another positive *modus se habendi,* i.e., a way in which the thing is.

93. 5.7.1; 5.7.3; 6.6.3; 7.3.10.

Other people respond otherwise, namely, that the distributive [sign] 'whatever' is distributive of substance, under which one should not subsume 'raw [meat]', since it is in the category of quality.

But this is not a sufficient solution, for 'whatever' distributes for every being; therefore it is possible to subsume under this distribution any term that supposits for something. Therefore, the following is a valid syllogism: 'Whatever is something, that is a being; but raw [meat] is something; therefore, raw [meat] is a being'. The consequence, therefore, was invalid for the reason mentioned above.

But the argument will be reinforced by assuming that I bought a round loaf of bread, and that then I changed its shape, adding or removing nothing. For this is possible, assuming that a shape [*figura*] does not differ from [the thing] so shaped [*figuratum*], so that I ate the whole bread. Then I syllogize as follows: whatever I bought I ate—this is true by the case assumed, and the objection raised concerning raw [meat] does not apply [here]—then let us take the minor that I bought round [bread] and conclude that 'therefore, I ate round [bread]', which is false by the case assumed, for I ate a differently shaped [loaf of bread], and also this present-tense proposition was never true: 'I eat round [bread]'.

It is therefore a legitimate question whether in this case this should be conceded: 'I ate round [bread]'. And it seems so, for this is true: '[It was] round [bread] I ate', for what was round I ate; therefore, in this case this is likewise true: 'I ate round [bread]'.

Proof of the consequence: the appellation pertained [to the suppositum] for the time of the verb, since in the past [the suppositum] was round; therefore the appellative term can be placed in the predicate position as well as in the subject position.

I believe, nevertheless, that this proposition should not be conceded, because although the appellation did pertain [to the suppositum] in the past, it did not at the time when I ate it. For all the appellations of the predicate have to pertain [to the suppositum] together at the same time: thus when I say 'I was eating a raw apple in Paris', it is necessary that at that time I should have been eating, I should have been eating an apple, and that it should have been raw, and in Paris. I say, therefore, that this argument was not valid: 'Whatever I bought I ate, and I bought round [bread]; therefore, I ate round [bread]', although one might conclude 'therefore, [it was] round [bread] I ate', or even 'therefore, I ate that which was round'.

TO THE THIRD SOPHISM [SOMETHING WHITE WILL BE BLACK]

The reply to the third sophism is that it is true. And it was said that in the reduction of a proposition about the past or future or possibility, the subject, if it is appellative, does not have to remain in its proper form. Also, concerning what was argued at the end, namely, that it is impossible that [a] white [thing] is black, I concede it in material supposition, namely, that the proposition '[A] white [thing] is black' is impossible. But from this it does not follow that this is false or impossible: '[A] white [thing] can be black', for these propositions are very different.

TO THE FOURTH SOPHISM [AN OLD MAN WILL BE A BOY]

To the fourth sophism I reply that it is true. And the induction is not valid, for it covers only present supposita, whereas it should also cover future ones because of the ampliation to the future ones. But from this induction it does correctly follow that 'therefore, nobody who is [an] old [man] will be a boy'.

TO THE FIFTH SOPHISM [SOCRATES WILL BE RUNNING TOMORROW]

To the fifth sophism I reply that it seems to me that it has to be distinguished for a better determination of the truth. For the word 'tomorrow' may be understood to determine either the time connoted by the verb 'will be' or by the predicate 'running'. If, therefore, it is understood to determine the time of the verb, then the proposition will be true, and in reducing it to a proposition about the present, the word 'tomorrow' is to be removed. If, however, that word 'tomorrow' is construed with 'running', then the sophism is false, for then the predicate would have to be preserved in its proper form in the reduction. Thus, strictly speaking [*de proprietate sermonis*], this would have to be conceded: 'Socrates will tomorrow be running', and this denied: 'Socrates will be running tomorrow'. And we should say that 'Socrates will run tomorrow' is to be resolved into 'Socrates will tomorrow be running'; and I also believe that here the whole of 'will tomorrow be' is the copula and that only the term

'running' is the predicate. Similarly, I say that 'Socrates disputed last year' is to be resolved into 'Socrates was last year disputing', and that the whole of 'was last year' is the copula of the proposition.

TO THE SIXTH SOPHISM [I SAW PETER AND ROBERT]

To the sixth sophism I reply that it implies two sophisms, and it seems to me that the sophisms are to be conceded. And we saw in the remarks how we should respond to the arguments to the contrary.

Second Part

In this chapter some more sophisms can be advanced concerning appellation.

Seventh sophism: This dog is your father

P.1 Proof: this dog is a father,[94] and it is yours; therefore, it is your father.

Similarly, pointing to a black friar, one could argue that he is a white friar: for he is white, and is a friar; therefore, he is a white friar. And one could likewise argue that he is not a black friar: for he is not black; rather, he is white; therefore, he is not a black friar, by the locus from the whole-in mode-to its part. One could argue in the same way about your father that he is not your father. For he is not yours, indeed, conversely, you are his; therefore, he is not your father.

94. Since it has puppies, that is.

Eighth sophism: Socrates' whiteness is his similarity to Plato

I posit the case that Socrates and Plato are now white according to equal degrees of whiteness, and that they are not similar in a quality other than whiteness. Furthermore, I posit that Socrates is becoming continuously whiter than Plato and Plato is not changing.

P.1 Then the sophism is proved [as follows]: Socrates is similar to Plato with respect to his similarity to Plato; and he is similar to him only with respect to whiteness; therefore, whiteness is his similarity to Plato.

O.1 The opposite is argued: Socrates' whiteness is continuously becoming stronger, as he is continuously becoming whiter. Yet, his similarity to Plato is not becoming stronger; on the contrary, it is getting weaker, for Socrates is continuously getting less similar to Plato, or he is even getting more dissimilar; therefore, that similarity is not that whiteness.

O.2 Again, no quality is a relation [*ad aliquid*], since these are distinct categories, but whiteness is a quality and similarity is a relation; therefore, etc. Or one might argue thus: nothing absolute is relative; but whiteness is something absolute, and similarity is something relative; therefore, etc.

On the appellation of appellative terms

Because of these sophisms we also have to note in connection with appellation that an appellative term sometimes appellates its thing in one way when it is the subject or the predicate of a proposition in itself, and in yet another way when it is added to another appellative term. For if it is taken in itself, then it appellates its thing as pertaining to the thing for which it supposits and not to another. But often when it is added to another appellative term, then it appellates its thing as pertaining to what that other term appellates. For example, if I say 'Socrates is good', the term 'good' appellates the goodness of Socrates. But when I say: 'Socrates is a good cleric' or 'good poet', then the term 'good' appellates the goodness of [his] knowledge or art and not the goodness of Socrates.

Sometimes an appellative term by its primary and principal imposition has been imposed to appellate its thing in a determinate way of appellating, which it retains if it becomes the subject or the predicate in itself, but by [reason of] some addition it is drawn into another mode of appellation, in accordance

with what the adjoined terms require. For example, the pronoun 'your' according to its principal imposition appellates you as the one whose possession it is for which it supposits. But when I say 'your father' then it appellates you as the one whose father it is for whom it supposits. And the same goes in its own way for 'your master', 'your teacher', and so on for other cases. And then, because of such changes in the mode of appellation, the consequence is not valid from conjoined terms to the same terms separated or from the separated terms to the same conjoined, but rather a fallacy *secundum quid et simpliciter* is committed, whereas such a consequence would be valid were it not for this change in the mode of appellation.

Therefore, by this we have an obvious solution to the above-stated sophisms.

Replies to the sophisms

TO THE SEVENTH SOPHISM [THIS DOG IS YOUR FATHER]

The reply to the seventh sophism is that the following consequence is not valid: 'This dog is a father, and it is yours; therefore, it is your father', for the appellation of the term 'your' is changed, as has been said. Nor is this valid: 'This is white, and this is a friar; therefore, this is a white friar', for 'white' first appellates the whiteness of the body, and then the whiteness of the monk's habit. And it is for the same reason that this consequence is not valid: 'A friar is not black; therefore, he is not a black friar'. Also, it is for the same reason that this consequence concerning your father is not valid: 'He is not yours; therefore, he is not your father', and for the same reason are these invalid: '[He is] white with respect to his teeth; therefore, [he is] white', '[He is] a good thief or a good sophist; therefore, [he is] good', and so on for other cases.

TO THE EIGHTH SOPHISM [SOCRATES' WHITENESS IS HIS SIMILARITY TO PLATO]

To the eighth sophism I would reply that it is true.

O.1 To the argument to the contrary one may respond on the basis of what has been said by conceding that the whiteness of Socrates is continuously get-

ting stronger. And when it is said that his similarity is not getting stronger, but rather weaker, I deny this; it is not getting to be a stronger similarity, since the appellation of the term 'stronger' is changed. For when I say '[Socrates'] similarity is getting stronger', the predicate 'stronger' appellates only the intensifying or increasing of that for which 'similarity' supposits, namely, [his] whiteness. But when I say '[it] is getting to be a stronger similarity', then 'stronger' appellates [the fact] that relatively there is getting to be a greater agreement between those qualities.

But there are some people who, without resorting to logic, say quite remarkably that neither is [the] whiteness getting stronger, nor is [the] similarity getting weaker, but it is the subject that is getting whiter, i.e., it is getting more intensely white, and it is getting less intensely similar, i.e., it is getting less similar. And then, if one were to argue thus: Socrates is getting more white, and not more similar, then all one could conclude to is that something that is getting more white is not getting more similar, which does not go against the sophism.

O.2 To the other objection I reply that substances and qualities may well be relative [*ad aliquid*], for Socrates is similar or dissimilar to something [*ad aliquid*], indeed to many things, and even [a] white [thing] is similar to [a] white [thing] and is dissimilar to [a] black [thing], and similarly [a] whiteness is identical with itself and diverse from everything else. But I say that terms in one category do not belong to another category, and therefore that no 'quality' is a 'substance' or 'quantity' or 'relation' is to be understood in this material sense. And in this way I also concede that an absolute term is not a relative term. Therefore, the terms 'whiteness' and 'similarity' do indeed differ; nevertheless, they supposit for the same thing.

Third Part

There are yet other difficulties with some modes of appellation, for the sake of which we posit some other sophisms.

Ninth sophism: You know the one approaching

And the ninth sophism pertaining to this chapter is to be: you know the one approaching.

I posit the case that you see your father approaching from afar, so that you cannot tell whether he is your father or someone else.

P.1 Then [the sophism] is proved as follows: you know your father well; and your father is the one approaching; therefore, you know the one approaching.

P.2 Again, you know the one who is known by you; but the one approaching is known by you; therefore, you know the one approaching.

P.2.1 I prove the minor: for your father is known by you, and your father is the one approaching; therefore, etc.

O.1 The opposite is argued: you do not know the person concerned when [he is such that], if asked who he is, you would truly say: 'I do not know'; but about the one approaching you will say this; therefore, etc.

Tenth sophism: You know that the coins in my purse are even in number

P.1 Proof: you know that every pair is an even number, and thus you know that every [group of] two [things] is even in number; but the coins in my purse are [a group of] two [things]; therefore, you know that they are even in number.

O.1 The opposite is argued thus: let us assume that you believe that there is only one coin in my purse, and thus you believe that the coins in my purse are not even in number. Then we argue as follows: you do not know that whose opposite you believe—for opinions or beliefs about opposites, namely, contraries or contradictories, cannot coexist in the same intellect, since they are contraries, as is said in bk. 4 of the *Metaphysics;*[95] but these are opposites: 'These coins are even in number' and 'They are not even in number'; and you believe that they are not even in number; therefore, you do not know that they are not even in number.

95. Aristotle, *Metaphysics* IV.3.1005b28–32.

Eleventh sophism: You believe that you are a donkey

P.1 Proof: whoever believes that his father is a donkey believes himself to be the son of a donkey, and, consequently, a donkey; but you believe that your father is a donkey; therefore, etc.

The proof of this involves positing the case that your father is covered by a donkey's hide, and you see him from afar walking on his feet and hands, so that you think he is a donkey; and then it is argued by an expository syllogism: of this you believe that it is a donkey; and this is your father; therefore, of your father your believe that he is a donkey.

O.1 The opposite is argued: you do not believe it; rather, you know the opposite, namely, that you are not a donkey.

Twelfth sophism: Socrates appears to be other than what he is

P.1 This is proved by using the previous case, namely, that your donkey-hide-clad father is Socrates, and thus Socrates appears to you to be a donkey; and that [namely, a donkey] he is not, but something other, namely, a man; therefore, he appears to be other than what he is.

P.2 Or thus: every donkey is other than Socrates; but Socrates appears to be a donkey; therefore, he appears to be other than what he is.

P.3 Or thus: Socrates appears to be something that he is not, but something other; therefore, etc.

The consequence seems to be self-evident.

The antecedent is clear: for he appears to be a donkey and that [namely, a donkey] he is not, and this conjunction is equivalent to this: 'He appears to be a donkey, which he is not', from which it follows that he appears to be something that he is not.

And this is confirmed again: positing that he appears to you to be a donkey and does not appear to be anything else, then, therefore, he appears to you to be something, for he appears to be a donkey and does not appear to you to be other than a donkey (by the case), which [namely, a donkey], however, he is not; therefore, he appears to you to be something that he is not; and, consequently, he appears to you to be other than what he is.

O.1 The opposite is argued: whichever thing in the world is pointed out to me, I judge that it is what it is; therefore, I do not judge that it is other than

what it is, for such judgments would be contraries, which cannot be in the same intellect at the same time.

O.2 Again, the verb 'is' as an absolute predicate [*secundum adiacens*] can be resolved into 'is a being', just as 'runs' can be resolved into 'is running'. Otherwise the propositions 'A man runs' and 'A man is' could not be converted. Therefore, if something appears to be other than what it is, it follows that it appears to be a being other than what is a being, and thus it appears to be other than a being, which is impossible.

O.3 Again, just as it follows: "For Socrates it is possible to be running; therefore, this is possible: 'Socrates runs' "; so, too, by parity of reasoning, it follows: "Socrates appears to be other than what he is; therefore, this is apparent: 'Socrates is other than what he is'," which is impossible.

On some special modes of appellation

Because of these sophisms, we have to realize that the verbs 'understand', 'know', and their like, which will be discussed later, and the participles and nouns deriving from them, such as 'understanding', 'knowing', 'thought', 'knowledge', etc., cause in the terms with which they are construed certain special modes of appellation. For, since I can know a thing in terms of several concepts, and according to those several concepts I can impose several names on that thing to signify it, these verbs make the terms with which they are construed appellate the concepts according to which the names were imposed to signify, and not just the things known outside [the mind], as other verbs do, but differently before and after [the verb]. For after [the verb] they appellate determinately and precisely their own concepts; but before [the verb] they appellate them indifferently and under a disjunction with other concepts in terms of which the things signified can be signified and understood.

For this reason, the proposition 'I know the one approaching' would not be true, properly speaking, unless I knew [i.e., recognized] him in terms of the concept according to which he is said to be the one approaching, even if I knew him well under other concepts. And thus this is not valid: 'I know Socrates; and Socrates is the one approaching; therefore, I know the one approaching', for although I know him in terms of the concept according to which he is called Socrates, still I do not know him in terms of the concept according to which he is called the one approaching. But on the side of the subject the following is valid: 'Socrates I know; and Socrates is the one approaching; therefore, the one approaching I know'. Indeed, this is similar to the way in which

we say that sight judges and recognizes something white, but not something sweet, even when it is the same thing that is white and that is sweet (although then it is still the case that something sweet it does judge and recognize, as is clear by the following expository syllogism: this white thing it judges; and it is sweet; therefore, something sweet it judges); therefore, this does not follow: 'The one approaching I know; therefore, I know the one approaching'; indeed, it is possible that I do not know the one approaching. But this does follow: 'I know the one approaching; therefore, the one approaching I know'. Just as [we could see] in other cases of appellation; [e.g.,] this did not follow: '[A] white [thing] will be; therefore, there will be [a] white [thing]', but the other way around it did: 'There will be [a] white [thing]; therefore, [a] white [thing] will be'.[96]

After this we should note that we impose names to signify by the mediation of the concepts whereby we understand things. Therefore, even the verb 'signify' produces such appellations, just as 'understand' or 'cognize' does, and so does the verb 'appear', and so do the verbs 'know', 'opine', 'believe', 'hold [the opinion]', etc.

Also, since our wishes arise in us by the mediation of cognition, it follows that the same sort of appellation is produced for us by the verbs 'want', 'wish', and 'desire'. Furthermore, since we make our promises and obligations in terms of certain concepts, it follows that the verbs 'owe', 'promise', 'obligate', etc., and other terms deriving from them also produce such appellation.

But we should also note that there is a difference between the verbs 'understand', 'cognize', and the like, on one hand, and the verbs 'know', 'believe', and the like, on the other; for we can cognize, understand, and apprehend things in terms of simple and incomplex concepts. But we know[97] or believe or opine things only in terms of complex concepts. Therefore, the verbs 'know', 'opine', etc. produce appellation not only of simple but also of complex concepts. And thus it is not a proper or complete expression [*locutio*] that I know or believe a man or a stone, but we have to say that I know that a man is an animal or that I believe that a stone is hard; and, conversely, *that a man is an animal* I know, or *that a stone is hard* I believe; or, in a divided manner: a man I know to be

96. *Album erit; igitur erit album* is invalid because, according to Buridan's analysis, this reads: 'Something (that is or will be) white will be; therefore, there will be something white'; or, in another possible translation of Buridan's analysis: 'Something (that is or will be) white will be; therefore, it will be white', which is obviously invalid. On the other hand, the converse implication; *erit album; ergo album erit* ('There will be something white; therefore, something [which is or will be] white will be') is obviously valid on the same analysis.

97. *Scire,* to know in the sense of having some (propositional) knowledge of something, as opposed to *cognoscere,* to know in the sense of being acquainted with something.

an animal and a stone I believe to be hard. But we accept the way of speaking [according to which we say] that of a man or a stone we have some knowledge, which is true only because we know about him that he is an animal, or risible, or [we know about it] that it is hard, and so on for other predicates. If, however, the whole clause [*dictum*][98] follows such verbs, as when we say 'I know that an isosceles has three angles equal to two right angles', then, if the proposition is true, that knowledge has to be in terms of the proposition 'An isosceles has three angles, etc.'. Therefore, this is not valid: 'I know that every triangle has three angles, etc.; and an isosceles is a triangle; therefore, I know that an isosceles has three angles, etc.'. This is not surprising, for this is not valid either: 'It is necessary that every donkey is an animal, and Brownie is a donkey; therefore, it is necessary that Brownie is an animal'. And Aristotle speaks rather superficially about this in bk. 1 of the *Posterior Analytics,* when he says that someone who knows that every triangle has three sides, etc. somehow knows that an isosceles or a figure inscribed in a semicircle has three sides, etc., but does not know absolutely speaking; for he does not actually know this unless he assumes the minor under the major, knowing that an isosceles is a triangle; but he knows this in proximate potentiality, for all that is missing is his subsumption of the minor under the major.[99] But these points of Aristotle do not satisfy the arguments [now being discussed]. For I raise the following difficult question: not placing the whole clause in the conclusion after [the verb], but placing its subject before and its predicate after [the verb], for example, [then one queries] whether this follows: 'I know that every B is A; therefore, every B I know to be A'; or even: 'I know that every triangle has three angles, etc.; therefore, every triangle I know to have three angles, etc.'.

And on the basis of this we can posit one more sophism along with the previous ones, and that becomes the thirteenth of this chapter.

98. In Latin the dictum is an accusative with infinitive construction, which, however, in line with the practice I followed in the translation of the previous treatises, I will uniformly render by a that-clause when it is the composite sense that is to be conveyed.

99. Aristotle, *Posterior Analytics* I.1.71a19–30.

Thirteenth sophism: Whoever knows that every triangle has three angles equal to two right angles [every isosceles knows to have three angles equal to two right angles]

Thirteenth sophism: whoever knows this conclusion: 'Every triangle has three angles equal to two right angles', every isosceles knows to have three angles equal to two right angles.

P.1 It is argued that this is so. For everybody who knows the conclusion in question, of every triangle has some knowledge, and this I assume. Of no triangle, however, does he have any knowledge, except that it has three angles, etc.—for I posit that of triangles he knows no other conclusion; therefore, of every triangle he knows that it has three angles equal to two right angles. And then this conclusion will be the major of another syllogism under which one assumes the minor that every isosceles is a triangle, and it will be concluded in the first mode of the first figure that he knows of every isosceles that it has three angles, etc., and this signifies the same as saying that every isosceles he knows to have three angles, etc. And then I return to the justification of what I assumed, namely, that whoever knows this conclusion: 'Every triangle has three angles, etc.', he of every triangle has some knowledge. For he who would deny this would, by parity of reasoning, have to say that a doctor has no knowledge of health or illness, and that a physicist who has all physical knowledge does not have knowledge of the heavens and the earth, of generation and corruption, and of animals and plants, and neither does an astronomer of the heavens and the stars, all of which appear to be entirely absurd. Therefore, we should concede the sophism.

O.1 But the opposite is argued, positing the case in which you see a figure from afar, which is an isosceles, but you think it is a circle; therefore, that isosceles you do not know to have three angles, etc., indeed, you believe it does not have angles; therefore, not every isosceles you know to have three angles, etc.

O.2 Again, knowing that every [group of] two [things] is even in number, you will know the coins in my purse to be even in number, as was argued elsewhere, which is false, for if you were asked whether they are even in number, you would truly say: 'I do not know'.

O.3. Again, in order to conclude from the known proposition 'Every triangle has three angles, etc.' that every isosceles has three angles, etc., the minor proposition that every isosceles is a triangle is required. But it is not necessary that on the basis of the knowledge of the major without the minor

one should know the conclusion. Therefore, it is not necessary that someone knowing of every triangle that it has three angles, etc. should know this of every isosceles.

The whole difficulty of this sophism seems to consist in the question whether the following [inference] is valid: 'I know that every triangle has three angles, etc.; therefore, of every triangle I have the knowledge that it has three angles, etc.'. Therefore, because of this difficulty, some people said that we have knowledge only of demonstrated conclusions but not of other things, such as stones or animals. And others say that it is not that of every triangle I have knowledge, but that I have knowledge of every triangle, from which it does not follow that 'therefore; of an isosceles'—for the appellation is changed after [the verb].

But this response seems to be rather crude, for it would imply that of no triangle would I have knowledge, since on whatever basis I would [have knowledge] of one, on the same basis I would [have knowledge] of all; therefore, either of all or of none. And then, by parity of reasoning it would follow that although I would have knowledge of God, of the heavens, of animals, of health and illness, nevertheless, of God I would have no knowledge, or of the heavens, or of animals; nor of health and illness would a doctor have any knowledge.[100] And this seems to be hard to swallow, although this opinion has a certain appeal [*apparentia*], for from a composite modal [proposition] there does not appear to follow a divided [proposition]. For example, this is not valid: 'It is necessary that every donkey is an animal; therefore, every donkey is necessarily an animal', for Aristotle would concede the first but would deny the second, for the reason that every donkey may not be, and, consequently, may not be an animal. Similarly, this is not valid: 'It is possible that every being is God; therefore, every being can be God', for the first is true—as this was the case before the creation of the world, and this would also be the case if God annihilated all creatures—and the second is false—for it is not possible for a creature to be God. Therefore, likewise, it seems that the following should not be valid: 'I know that every B is A; therefore, every B I know to be A', or even 'I know every triangle to have three angles, etc.; therefore, every triangle I know to have three angles, etc.'. But one might say that the case is not the same with all kinds of modal propositions; for although it may not be valid in all cases, nothing prevents it from being valid in some. For example, this is valid: 'It is true that every B is an A; therefore, every B is truly an A';

100. The important difference here lies in word order: if the grammatical object of the verb follows the verb, then it appellates its concept precisely and exclusively, but if it precedes the verb, then it appellates its concept in disjunction with other concepts that refer to the same thing as the concept of the grammatical object of the verb does.

therefore, it seems plausible that this is valid: 'I know that every triangle has three angles, etc.; therefore, of every triangle I know that it has three angles, etc.', or even 'therefore, every triangle I know to have three angles, etc.'.

But then we respond to the arguments on the opposite side.

O.1 To the first, I reply that of the same thing I may have doubt by one proposition and have true knowledge by another conclusion, as about the four elements I know truly that they are corruptible and doubt whether they remain in the mixed body. In the same way, if I see a mule that I take to be a pregnant mare, then of this beast I have true knowledge by means of this proposition, which I know: 'Every mule is sterile'; nevertheless, together with this I have a false belief [expressed] by the proposition 'This beast is pregnant'. Also, in the same way, of this isosceles I have the knowledge that it has three angles etc., [expressed] by the proposition 'Every triangle has three angles, etc.'; nevertheless, together with this I also have a false judgment about it [as expressed] by the proposition 'This figure is a circle'.

O.2 To the other, I reply similarly that the coins in my purse you know to be even in number, but not [as expressed] by the proposition 'The coins in my purse are even in number', but [as expressed] by the proposition 'Every [group of] two [things] is even in number'.

O.3 To the other, I reply likewise that it follows that if I know that every triangle has three angles, etc., then, on this basis, of every isosceles I know that it has three angles, etc., but it does not follow that I know that every isosceles has three angles, etc.

Fourteenth sophism: Socrates the astronomer knows some stars to be above our hemisphere

Next, and associated with this matter, there follows immediately the fourteenth sophism of this chapter, which appears more difficult: Socrates the astronomer knows some stars to be above our hemisphere.

P.1 Proof: any good astronomer, such as I posit Socrates to be, knows that above any hemisphere there is one half of the sky, containing a multitude of stars; therefore, he easily concludes and knows that there are many stars above our hemisphere.

O.1 The opposite is argued by positing the case that Socrates is in a dark cell, so that he does not know whether it is day or night, and thus he does

not know which part of the sky is above our hemisphere. Then we argue thus: if Socrates knows some stars to be above our hemisphere, it follows that of some stars he has the knowledge that they are above our hemisphere. This consequent is false; therefore, so is the antecedent.

O.1.1 The falsity of the consequent is proved, for of the sun he does not know whether it is above our hemisphere; rather, he doubts whether it is above or below, as was posited in the case, and so on about the moon, or about Leo, he does not know whether either is above, nor [does he know] about the stars of Aries, nor about the stars of Libra, and so on for the others. Therefore, of none does he know that they are above our hemisphere, and this contradicts that consequent; therefore, that consequent is false.

O.1.2 And then the consequence is proved by means of what has been said in connection with the other sophism, namely, that the following is valid: 'I know every B to be A; therefore, every B I know to be A'; therefore, this is likewise valid: 'I know some B to be A; therefore, some B I know to be A', or even 'therefore, of some B I have the knowledge that it is A'. Therefore, similarly, if I know some stars to be above our hemisphere, it follows that of some I know that they are above our hemisphere.

O.2 Again, either of every star he knows that it is above or [he knows this] of none, for he knows no more about those than he does about these, indeed, he is in doubt equally about all [cases]. But we cannot say that of every star he knows that they are above, for then he would know something false, which is impossible; therefore, of none he knows that it is above. And from this it seems to follow that he does not know this conclusion, namely, that some stars are above our hemisphere. Otherwise we would have to say that knowledge of the conclusions of natural or medical sciences yields no knowledge of natural or medical things, and this we earlier found hard to accept.

It seems to me that as far as the reply to this sophism and to the previous one is concerned it has to be recognized that the whole difficulty turns on whether this follows: 'I know some star to be above our hemisphere; therefore, some star I know to be above our hemisphere'. And this resembles what happens when a contradiction is propounded to me and I do not know which member of it is true. Does this then follow: 'I know one member of this contradiction to be true; therefore, one member of this contradiction I know to be true', or alternatively 'therefore, of one member of this contradiction I have the knowledge that it is true'? And it is believed that the consequence is valid, and then the sophism is conceded, namely, that Socrates knows some stars to be above our hemisphere and also that some stars he knows to be above our hemisphere, and similarly that he knows one member of that contradiction to be true, and also that one member he knows to be true.

And so we reply to the arguments on the opposite side by which it was contended that Socrates of no star knows that it is above our hemisphere, and that of neither part of that contradiction he knows that it is true.

O.1.1 Thus when it is argued that neither the sun does he know to be above the earth, nor the moon, and so on, I deny the induction; indeed, those stars that are above the earth he knows to be above the earth. For example, when the stars of Aries are above the earth, of those he knows that they are above the earth, but he does not know this in terms of the proposition 'The stars of Aries are above the earth', but rather he knows this in terms of the proposition 'Some stars are above the earth'. Similarly, one member of that contradiction I know to be true, and the other to be false, for example, if the affirmative is true and the negative is false, then the affirmative I know to be true and the negative I know to be false, but not in terms of the proposition 'The affirmative is true and the negative is false'. For indeed, this is what I doubt about them, but in terms of the proposition that one is true and the other is false.

O.2 To the other I reply that it is neither of all nor of none that he knows that they are above, but of those that are above he knows that they are above, and of the others he knows that they are below, but not in terms of the proposition 'These are above and these are below', but rather in terms of this: 'Some are above, and some are below'. And if it were asked whether of the sun he knows that it is above, I would say yes, if the sun is above, and no, if it is not. Therefore I concede that although of the sun he knows that it is above, still he does not know whether of the sun he knows this.

Next, on the basis of what has been said, we should also solve the sophisms presented earlier and not yet solved.

Replies to the sophisms

TO THE NINTH SOPHISM [YOU KNOW THE ONE APPROACHING]

To the sophism that was the ninth of this chapter I reply that in the case posited the sophism is true, namely, 'You know the one approaching'. For you know him in terms of the concept according to which he is said to be the one approaching, for you see him approaching.

O.1 And when it is argued against this that if you were asked who he is you would reply: 'I do not know', then I reply that I indeed would be able

to tell that he is something, that he is a substance, or perhaps even that he is an animal, and a man. But I cannot tell whether he is Socrates or Plato, for I do not know him in terms of the proposition 'This is Socrates' or 'This is my father'. But I do know [enough] to say that this is the one approaching, for I know him in terms of the proposition 'This is the one approaching'.

But then let the case be posited that he is approaching and you do not see him, nor you do in any way think about his approaching; and then it is asked whether you know the one approaching.

I reply negatively, even though the one approaching I do indeed know. Nor is the following argument valid: 'You know your father, etc.', for there is a change of appellation after [the verb]. But then another and more difficult argument can arise in the following terms: 'You know the one who is known by you; but the one approaching is known by you; therefore, you know the one approaching'. I concede the major and the minor and I deny the consequence. For one should infer 'therefore, the one approaching you know', or one should infer 'therefore, you know the one who is the one approaching'. Whence we should note that this last proposition, namely, 'You know the one who is the one approaching' is hypothetical;[101] therefore, the verb 'know' that is in the first [implied] categorical does not operate on the appellation of the term 'the one approaching', which is in the second categorical, so that [the verb] does not force it to appellate precisely its concept. Likewise, I would say that this is true: 'Antichrist will preach', whereas this is false: 'Antichrist is the one who will preach', for in the first, which was categorical, the verb 'will preach' operates on [the term] 'Antichrist', making it supposit for a future thing; but in the second, which is hypothetical, it does not operate on it, for it is in a further categorical.

101. Let us not forget here that Buridan by 'hypothetical' means a compound proposition, which need not be conditional. The proposition *Tu cognoscis illum qui est veniens* ('You know the one who is the one approaching') is hypothetical in this sense because of the embedded relative clause. On account of this embedded relative clause this proposition is equivalent to the conjunction (which is also a hypothetical in this sense) *Tu cognoscis aliquem et ille est veniens* ('You know someone and he is the one approaching'), where it is clear that the verb of the first conjunct cannot force appellation in the second, and so this may be true even if you do not know that the one approaching is a person you know.

TO THE TENTH SOPHISM [YOU KNOW THAT THE COINS IN MY PURSE ARE EVEN IN NUMBER]

To the tenth sophism I reply that it is false.

For you do not know the coins in my purse to be even in number, although I concede that the coins in my purse you know to be even in number by the proposition known by you that every [group of] two [things] is of an even number. Nor does the argument validly conclude that you know the coins to be even in number, for the appellation is changed after [the verb]. And I also say that the following are not incompatible but are true at the same time: 'The coins in my purse you know to be even in number' and 'Those [same coins] you believe to be odd in number', for this knowledge and this belief are in terms of diverse propositions.[102] But these would be incompatible: 'You know these coins to be even in number' and 'You believe these coins not to be even in number'.[103] But this will be discussed later.

TO THE ELEVENTH SOPHISM [YOU BELIEVE THAT YOU ARE A DONKEY]

[In reply] to the eleventh sophism, I deny it. Now I could deny the major 'Whoever believes, etc.', but in the given case it does no harm if we concede it. But I deny the minor: 'You believe that your father is a donkey'. And [in reply] to the proof I accept the case and the whole expository syllogism. Therefore, I concede that my father I believe to be a donkey. But it does not follow that 'therefore, I believe that my father is a donkey', for my father I did believe to be a donkey, but not in terms of the proposition 'My father is a donkey', but rather in terms of this: 'This is a donkey'.

102. You have the knowledge that every group of two things is of an even number, insofar as you know the proposition 'Every group of two things is of an even number', and this also covers the group of the coins in my purse; but of the coins in my purse you have the belief that they are not of an even number, insofar as you believe this proposition as well: 'The coins in your purse are of an odd number'.

103. For these two claims would say that you know the proposition 'These coins are of an even number' and that you believe the proposition 'These [same] coins are not of an even number', thereby attributing explicitly inconsistent beliefs to you.

TO THE TWELFTH SOPHISM [SOCRATES APPEARS TO BE OTHER THAN WHAT HE IS]

To the twelfth sophism I reply that it is false.

Likewise, this is false: 'Socrates appears to be something, which he is not': for he appears to be something and he is something.[104] But I would definitely concede these: 'Socrates something appears to be which he is not',[105] and similarly, 'Socrates something other appears to be than he is'. And I would likewise concede that Socrates appears to me to be a donkey, which he is not, but something other.

P.1 Therefore, when it is argued: 'Socrates appears to be a donkey; and that he is not, but is something other; therefore, he appears to be something other than what he is', I concede the antecedent and deny the consequence, for the appellated concepts are changed after [the verb], and with this the [anaphoric] relation [*relatio*][106] is changed just as are the antecedents.[107] For if I say 'He appears to be a donkey; and that he is not but something other', this has the sense that he is not a donkey but something other than a donkey. But if I say 'appears to be something; and that he is not, but something other', this has the sense that he is not something, but something other than something, which is false.

P.2 And in the same way, as far as the second argument is concerned, I concede the premises and I deny the consequence.

P.3. Concerning the third argument, I deny this proposition: 'Socrates appears to be something, which he is not'.[108] And to the proof I reply that this consequence is not valid: 'He appears to be a donkey, which he is not; there-

104. *Quia si apparet esse aliquid, et ipse est aliquid.* I omitted the "dangling" *si* of the critical text here, which is indeed omitted in some of the mss. Alternatively, this clause might be translated as "for if he appears to be something, then he also is something."

105. Obviously, Buridan's concern here is to place the object of 'appears' in front of the verb, so that the verb cannot force the appellation of the concept of the object. Indeed, this is why he rejected the previous sentence, for on his reading it would be equivalent to 'Socrates appears to be something, and he is not something', whereas this latter formulation he concedes, because on his interpretation it is equivalent to 'Something is such that Socrates appears to be it, and he is not it'.

106. That is, the back-reference by means of the relative pronoun 'that'.

107. The "antecedents," i.e., those to which the relative pronoun is related in the anaphora, or back-reference.

108. By this translation I only make more explicit Buridan's interpretation of *Socrates apparet esse aliquid quod ipse non est.* This otherwise might also be translated as 'Socrates appears to be something that he is not'. In English, however, this would bring out the sense of the same Latin sentence that Buridan wants to accept, and in that sense it cannot serve as the premise of the objection, if the objection is to have any force.

fore, he appears to be something, which he is not'. And further, when it is said 'I posit [the case that he] appears to you to be a donkey, and that you witness no other appearance', I say that the case is impossible, for that appearance is complex; therefore, it implies incomplex appearances each one of which is other than it. But I concede that I witness no other appearance such that it is not required for the existence of this one. But then, when it is said further: 'This appears to you to be something', I say that this perhaps should be denied in accordance with the posited case, for now we are dealing with another appearance, related by another proposition. For the proposition 'This is a donkey' is other than the proposition 'This is something', and there can be an appearance of the one without the appearance of the other. Hence, there is no doubt that this can appear to be something without appearing to be a donkey, and perhaps this might occur also conversely, if the inferior concept could be detached from the superior one,[109] but this need not be discussed at present.

But let us assume that Socrates appears to you to be a donkey and to be something; nevertheless, when it is said further that he does not appear to you to be something other than a donkey, I concede it, for it does not follow from these appearances that he would appear to you yet again in terms of the proposition 'This is something other than a donkey'. But even this does not imply that he appears to be something, which he is not. For all such consequences are false, since the predicates and the appellated concepts are changed after [the verb].

But all the aforementioned points notwithstanding, the question still remains whether this [proposition] is possible: 'Something appears to you to be something[,] which it is not'.[110] For although in accordance with what has been said this cannot be possible concerning things that exist, just as Socrates was assumed to exist, nevertheless, probably it is possible concerning things that do not exist. Let us posit the case that my horse Brownie is dead, but that by his species preserved in my sensitive faculty [111] he can still appear to me either

109. That is, something might appear to be a donkey without appearing to be something, if, despite the fact that the concept of 'donkey' implies the concept of 'something' (for whatever is a donkey is something), it could appear to someone only as a donkey, without thereby appearing to him as something, i.e., if he did not realize that whatever is a donkey must be something.

110. Of course, adding or omitting the comma in front of the relative clause would disambiguate this written English sentence. Buridan's point will be precisely to make the relevant distinction in spoken Latin, which we would also have to indicate in spoken English in some other way, namely, by a pause and somewhat different intonation.

111. *Species* in this context means the sensory impression of a thing retained in the sensitive soul responsible for an animal's ability to perceive, remember, dream, or imagine, and, in general, process sensory information about sensible individuals.

through my memory or in a dream just as though he were present. And then Brownie appears to me to be something, but that [something] he is not, for he is nothing. And it seems to me that the proposition 'Brownie appears to me to be something[,] which he is not' is to be distinguished, for it can be a hypothetical proposition, and then it is equivalent to this: 'Brownie appears to me to be something, and that thing he is not', and this is a true proposition. In the other way it can be understood as constituting one categorical [proposition], so that the whole [phrase] 'something that he is not' is taken as a hypothetical predicate. Then its sense would be that Brownie appears [as conceived] in terms of the proposition and combination [of concepts] that Brownie is something which he is not, and this is false and impossible. And if you ask which one of these two senses is the more proper [*magis de proprietate sermonis*], I reply that it depends on how the spoken proposition is uttered or on how the written proposition is written. For if it is uttered with a pause or written with a comma[112] between the expression 'Brownie appears to you to be something' and the remainder 'which he is not', then the proposition is obviously hypothetical, for the interpunction [*divisio*] indicates that this whole [phrase taken] together: 'something, which he is not' is not one predicate. But if it is written or uttered continuously, without a comma or a pause, then it would appear that it is more in accordance with correct speaking or writing to construe it as a categorical proposition. Hence it comes about that in such propositions there is often a difference of this kind, and if such a distinction is not observed, then a fallacy of composition and division is committed.

Fifteenth sophism: I owe you a horse

Finally, concerning this matter, we posit the fifteenth sophism in this chapter, and it is a rather difficult one, namely, 'I owe you a horse', and likewise [we have] this one: 'I owe you a dollar'.[113]

And I posit the case that in return for some good service that you performed for me, I promised you one good horse, and that I obligated myself before a competent judge to give you one good horse.

112. Buridan's actual word, *punctum,* is the equivalent of 'period' or 'full stop', but of course this usage indicates only the different notational convention for interpunction of his time.

113. Buridan's word is actually *denarius,* but perhaps we can make the example more lifelike by talking about dollars here, "the" currency of our own time.

P.1 Then the sophism manifestly appears [to be true]: for it is commonly said that everything promised is something owed [*omne promissum cadit in debitum*]. And since this I owe, as long as I do not deliver what I obligated myself to deliver by means of a legitimate obligation before a judge, you can justly sue me in order that I deliver the horse to you, and this you could not do if I did not owe it to you. Likewise, I posit that I bought from you mustard for a dollar and I did not pay; so, it follows that I owe you a dollar.

O.1 But the opposite side is argued for in a way that is difficult to solve, granting the aforementioned cases, thus: nothing is owed by me to you;[114] therefore, I owe you neither a horse nor a dollar.

O.1.1 The consequence seems to be self-evident. For if you were to acknowledge before a judge that no thing is owed by me to you, the judge would rule that I was free from the debt.

O.1.2 But I justify the antecedent: for this horse, namely, Blackie, is not owed by me to you; therefore, no horse is owed by me to you, and, consequently, no thing is owed by me to you; for no thing did I promise you but a horse.

But then there remain two things to be proved: first, the consequence 'This horse, namely, Blackie, is not owed by me to you; therefore, no horse is owed by me to you'; and second, the antecedent of this consequence will have to be proved.

I prove, therefore, first the consequence: I no more owe you Blackie than Tawny, since I no more promised this one than the other, and I could equally satisfy [you] with the one just as with the other; therefore, it follows that if Blackie is not owed by me to you, then neither is Tawny, for the same reason, and so on for the other horses. Therefore, no horse is owed by me to you, and thus that consequence is evident.

But then I prove the antecedent: for, as was said above, I no more owe you Blackie than Tawny; therefore, either both are owed by me to you or neither. If neither, then I have what I wanted to prove, namely, that Blackie is not owed by me to you. But it cannot be said that both [horses] are owed by me to you, for I promised only one; therefore, I owe only one, for it does not follow that if I owe one, then I should owe two.

Again, I could obligate myself to give you a horse or a dollar[115] if I actually

114. *Nullum tibi debeo.* As we shall see, the word order is important for Buridan. The point is that the indirect object 'horse' should precede the verb 'owe'. Since English seems to be more restrictive as to word order in this case, I use the passive voice to make the translation preserve this word order and read tolerably at the same time.

115. This time, the actual currency Buridan is referring to in the text is *florenus,* but I will just stick with dollars, for the sake of simplicity.

do not have either a horse or a dollar just as well as if I had them: for I am capable of having them before the assigned deadline for payment. Therefore, I posit the case that, although I do not have a horse, I promise to give you a horse before Easter, and I obligate myself to do so. Then in this case I argue, just as before, that nothing is owed by me to you. For the king's horse is not owed by me to you, since that I did not promise you nor did I obligate myself to give you that [horse]; and, in the same way, the pope's horse is not owed by me to you, nor Peter's horse; and the same goes for the others, by parity of reasoning; therefore, no horse is owed by me to you. But nothing else do I owe or have promised you; therefore, nothing is owed by me to you.

This sophism appears to be difficult. First, however, I lay it down that in the case posited I would owe you a horse, but then the question arises whether I owe you Blackie. And we should reply that this is not so, and also that by promising you a horse I did not promise you Blackie; for, as was said earlier, the verbs 'promise' and 'owe', just like the verbs 'know' and 'think', make the terms following them appellate their concepts. Therefore, a consequence is not valid in which the concept or predicate is changed after [the verb]; indeed, it does not appear to be a valid consequence either if we descend from the species to the individual without distribution.[116] It should be added, however, that it makes a great difference whether we place 'horse' before or after [the verb], for the aforementioned verbs, because of the appellation of the concept, somehow confuse the [supposition of the] terms that follow them, so that it is not possible to descend to the singulars by means of a disjunctive proposition. For example, this is not valid: 'I owe you a horse; therefore, I owe you Tawny, or I owe you Blackie', and so forth; for each [member of this disjunction] is false. But before [the verb] the term is not thus confused; therefore, it is possible to descend by means of a disjunctive [proposition]. Therefore, if 'A horse is owed by me to you' is true, then it follows that either Tawny is owed by me to you or Blackie is owed by me to you, and so forth.

And then, admitting that in the previous case this is true: 'I owe you a horse'—because I promised it to you, and I obligated myself precisely with the words: 'I promise you one good horse, and I acknowledge that I owe you one good horse'—the difficult question is whether this is true: 'A horse is owed by me to you', or 'Some horse is owed by me to you', or even 'One horse is owed by me to you'. And this is tantamount to asking whether this is valid: 'I owe you a horse; therefore, a horse is owed by me to you'. But in order to

116. That is, an inference of the form 'I owe you a B; therefore, I owe you this B', in which the common term B is replaced by a singular term falling under B, is not valid and is one without distribution; i.e., is not distributed in it, as it would be in 'I owe you every B; therefore I owe you this B'.

solve this problem, I assume that in the proposition 'A horse is owed by me to you', the word 'horse' is not confused but supposits determinately, for no cause of confusion precedes it.[117] Likewise, I assume that it does not appellate determinately and precisely the concept according to which the name 'horse' is imposed [to signify], for it is not placed after the verb 'owe' but before it; therefore, the verb does not effect such an appellation within it.

Furthermore, I posit that there neither are nor can be more horses than Brownie, Blackie, and Tawny, so that if it is necessary to perform an induction, then it will be sufficient to do so over these three. For this amounts to the same in this case as if there were or could be an infinite number of them, for even if there were an infinite number of them, we would still perform the induction over two or three, adding the clause 'and so on for the others'.

Then, with these assumptions, I put forth the conclusion that if 'A horse is owed by me to you' is true, then the disjunctive proposition: 'Blackie is owed by me to you, or Tawny is owed by me to you, or Brownie is owed by me to you' is also true, for it is possible to descend by means of a disjunctive proposition under a common term suppositing determinately and not appellating precisely some concept.

Second, I conclude that if 'A horse is owed by me to you' is true, then one of those three propositions has to be true—namely, 'Blackie is owed by me to you', 'Tawny is owed by me to you', 'Brownie is owed by me to you'—for the disjunctive followed from it, and that cannot be true unless one member of it is true.

Third, I conclude that if some one of these three is true, then any one of them is true; and if some one of them is false, then any one of them is false, for in accordance with the case there is no greater reason for one [of them to be true] than for another; therefore, either none or any one of them is true.

And so as well, I conclude, fourth, that given the aforementioned case it follows that if a horse is owed by me, then every horse is owed by me, and that if a horse is not owed by me, then no horse is owed by me.

Whence in the fifth place I conclude that in the aforementioned case it is necessary that one of these be true, namely, either that every horse is owed by me to you or that no horse is owed by me to you. This is proved, for the following are subcontraries or obey the law of subcontraries, namely, 'A horse is owed by me to you' and 'A horse is not owed by me to you'. Hence, they cannot both be false at the same time; therefore, one of them is true. In the immediately preceding fourth conclusion, however, it was said that each of them implies its [corresponding] universal; therefore, one of those universals

117. See 4.3.7.

has to be true. And then there remains the question which one of them is true, namely, whether every horse is owed by me to you or no horse is owed by me to you.

And concerning this we should conclude in the sixth place that in the given case this is valid: 'No horse is owed by me to you; therefore, nothing is owed by me to you', for I promised nothing but a horse. And I would appear to owe you a horse rather than something else. Therefore, if no horse is owed by me to you, then nothing else is owed by me to you, and consequently, it follows that nothing is owed by me to you. Therefore, this much has been finally established, namely, that it is necessary to concede either that nothing is owed by me to you or that every horse is owed by me to you.

Now, then, we should see which one of these should be conceded. And first let us consider whether this is true and to be conceded: 'Every horse is owed by me to you'.

P'.1 And it is argued that it is true. For every thing I owe is such that by its delivery I would satisfy [my obligation] and would be freed from the debt. But by giving you this horse I would be quit; therefore, that [horse] I owed, and the same goes for another horse, and so on for [all] the other singulars. Therefore, every horse I owed.

P'.2 Again, whoever owes [something] and claims nothing to owe manifestly denies his debt, since the negation precedes the verb 'owe'. But it is unacceptable and dishonest for the debtor to deny his debt. Therefore, it should not be said that nothing is owed by him. But if this cannot be said, then it is necessary to concede the other side, namely, that every horse is owed by him.

P'.3 Again, in the previous sophisms it was taken as unacceptable to say, if someone knows a triangle to have three angles, etc., that no triangle is known by him to have three angles, etc. Likewise, it is unacceptable to say, if someone owes a horse, that no horse is owed by him.

P'.4 Again, if the creditor admitted in front of a judge that nothing was owed by me to him, the judge would exonerate me. But it would be entirely unacceptable to the creditor that the debtor should be exonerated without any payment. Therefore, it should not be said that nothing is owed by me; and so every horse is owed by me to him.

O'.1 The opposite is argued: for no one is exonerated from a debt unless he delivers everything he owes or at least the greater part of it. Therefore, if every horse were owed by me, then I could not be exonerated, unless I delivered every horse, and this is not true. Therefore, not every horse is owed by me.

O'.2 Again, if every horse were owed by me, then the king's horse would be owed by me, which is false, for I never obligated myself to deliver that [horse]; therefore, not every horse is owed by me, and the judge would take you to be

dimwitted if, on the basis of such a promise, you were to demand the king's horse from me.

O'.3 Again, in the proposition 'I owe you a horse', the term 'horse' is confused without distribution, and in 'A horse is owed by me to you' it stands determinately. But there is no valid consequence from a term standing merely confusedly to the same term standing determinately, unless the cause of the confusion is removed, as has been remarked elsewhere.[118]

O'.4 And again, whether there is confusion or no confusion, it has nevertheless been said that something distributed does not follow from something nondistributed. But in 'I owe you a horse' nothing is distributed, whereas in 'Every horse is owed by me to you' something is distributed. Therefore, this is not valid: 'I owe a horse; therefore, every horse is owed by me'.

O'.5 Again, if every horse were to be owed by me to you, then Blackie and Tawny would be owed by me to you. Therefore, two [horses] would be owed by me, which is false, for the obligation concerned only one.

We should realize that some people, wanting to evade the difficulty straight away, say that this is not a proper locution: 'I owe you a horse' or 'A horse is owed by me to you', but that this locution should be taken in the sense that 'I owe or am bound to bring it about that you have from me a horse'. And so the proposition 'I owe you a horse' or 'A horse is owed by me to you' is neither true nor false, except in this sense.[119]

But this solution seems to me to be superficial, for there are several ways in which [it can be arranged that] this can be brought about: for one way to bring this about would be to give you Blackie, and another way to bring this about would be to give you Tawny. Therefore, the question would recur whether I would be bound to do so in every such way or whether I would be bound to do so in no such way.

Again, although a chimera cannot be seen, nor can a lunar eclipse be killed, yet the following are grammatical sentences according to the grammarian: 'A

118. See 4.3.6.

119. For discussion of this "evasive move" by Ockham (William of Ockham, *Summa Logicae,* ed. P. Boehner, G. Gál, and S. Brown [St. Bonaventure, N.Y.: Franciscan Institute, 1974], I, 72, ll. 165–81, p. 220.) as well as in contemporary logic, see S. L. Read, "'I promise a penny that I do not promise': The Realist/Nominalist Debate over Intensional Propositions in Fourteenth-Century British Logic and Its Contemporary Relevance," in *The Rise of British Logic,* ed. P. Osmund Lewry (Toronto: Pontifical Institute of Mediaeval Studies, 1985), pp. 335–59; J. Biard, "Le cheval de Buridan: Logique et philosophie du langage dans l'analyse d'un verbe intentionnel," in *Die Philosophie im 14. und 15. Jahrhundert,* ed. O. Pluta (Amsterdam: Grüner, 1988), pp. 119–37; G. Klima, "*Debeo tibi equum:* A Reconstruction of the Theoretical Framework of Buridan's Treatment of the *Sophisma,*" in *Sophisms in Medieval Logic and Grammar,* ed. S. Read (Dordrecht: Kluwer, 1993), pp. 333–47.

chimera is seen by you' or 'A lunar eclipse is killed by you', hence either of them has to be true or false in the form propounded.[120] Therefore, the same goes for 'A horse is owed by me', even if it were impossible for me to owe a horse. And for this reason some other people concede 'I owe you a horse' or 'I owe you something' but deny 'A horse is owed by me' or 'Something is owed by me' on the basis of the arguments put forward [above]. But instead it would appear to me that it should be said that this is to be conceded: 'Every horse is owed by me to you', for it is not clear to me how I could satisfy [my obligation] except by giving you that which I owe. But I would satisfy [my obligation] by giving you Blackie; therefore, I owed Blackie, or at least Blackie was owed by me; and the same goes for Tawny. But I do not think that this should be conceded: 'I owe Blackie', or even 'I owe every horse', for it is not according to this concept that the obligation was made, although this is what these propositions signify because of the appellation after [the verb].

Then I reply to the arguments to the opposite side.

O'.1 To the first, I deny that I have to deliver everything I owe, but it is enough if I give something or some things to which the term by means of which the obligation was made applies. For example, if I owe five dollars,[121] it is not enough if I pay four dollars, for those are not five dollars, although they are a part of five dollars.

O'.2 To the other I reply that the king's horse is owed by me, and it was to the delivery of the king's horse that I obligated myself. Therefore, if I were to buy that horse or it were to be given to me and I were to deliver it, I would be quit [of my debt]. But I do not owe the king's horse, nor did I obligate myself to deliver the king's horse, nor can you demand the king's horse, except under disjunction with the others, for I did not promise according to the concept in terms of which it is called the king's horse, but according to the indefinite concept of the term 'horse'.

O'.3 To the other I reply that here there is no such confusion as there would be by the distribution of the preceding term, but there is confusion such that one cannot descend under the term after [the verb], indeed, one cannot even switch the term, because it appellates its concept. But it is possible to change it before [the verb], although this is not so in the case of confusion by distribution.

O'.4 To the other I reply that sometimes a distributed term follows from the

120. For the opinion of some early medieval grammarians who would disagree on this point, see S. Ebbesen, "The Present King of France Wears Hypothetical Shoes with Categorical Laces: Twelfth Century Writers on Well-Formedness," *Medioevo* 7 (1981): 91–113.

121. This time, Buridan's actual currency is *solidus,* but we can safely stick with our dollars.

non-distributed form of itself on account of the subject matter [*gratia materiae*], because there is no more reason for the one than for the other [of its singulars].[122] For example, it follows that if some man exists, then every man exists.[123] And if I say 'B runs', it follows, if 'B' supposits for some B, that 'B' for every B supposits. But it does not follow that it supposits for every B, for this would mean that it would supposit distributively, since the verb 'supposit' would make the terms following it appellate their concepts.

O'.5 To the other I reply that I do not owe two [horses], but two [horses] are owed by me, not taking 'two' collectively, but distributively, i.e., either of those two.[124]

Chapter 5: On ampliation and restriction

The fifth chapter concerns ampliation and restriction, with respect to which we have to presuppose what has been said in the *Summulae* in the treatise on supposition.[125] And now we form in this connection some simple sophisms.

First sophism: Some horse does not exist

P.1 Proof: nothing that is corrupted exists; but some horse is corrupted; therefore, some horse does not exist.

122. That is to say, if a term A occurs in the context of a proposition nondistributed, and the proposition is equally true for any of the individuals falling under A, then it will also be true for every singular falling under A, i.e., the same proposition with A distributed in it will also be true. For example, this is the case with 'A man is animal', and so, if it is true, then 'Every man is an animal' is also true.

123. This is because 'man' in the context of these present-tense propositions can supposit only for presently existing men, if there are any.

124. But I do not owe both, because that would be the collective sense of the phrase.

125. See 4.6.

P.1.1 The mode of arguing appears to be formally valid, since it is in the fourth mode of the first figure.

P.1.2 The major is true, for corruption is a change from being to nonbeing, and also because that which is corrupted does not recur numerically the same, as is clear from bk. 2 of *On Generation and Corruption*.[126]

P.1.3 The minor is also clear[ly true]: for every horse that dies, by dying is corrupted, given that its form had been educed from the potency of matter;[127] but many horses have died and are dead; therefore, not just some horse is corrupted, but many are.

The argument proceeds in a similar manner with reference to those that are to be generated. For nothing that is to be generated exists; but some horse is to be generated, namely, one that will be generated tomorrow; therefore, etc.

O.1 The opposite is argued, because the opposite of the sophism is true, namely, 'Every horse exists', as is clear by induction.[128] Therefore, the sophism is false.

I reply that the sophism is false.

P.1.1 And I say that the argument is formally invalid: for a term with a more ample supposition and without distribution does not imply the same term with a less ample supposition. But in the premise 'Some horse is corrupted', the term 'horse' is ampliated to supposit for past [horses], because the predicate 'corrupted' is of past tense, and in the conclusion it is not so ampliated. In a similar manner, in the premise 'Some horse is to be generated' or 'will be generated', the term 'horse' is ampliated to supposit for future [horses], and it is not so ampliated in the conclusion. We should be careful, however, about the proposition 'Nothing corrupted is' [*Nullum mortuum est*],[129] for it can be subject to distinctions, since this whole [phrase] 'corrupted is' can be taken as one word [*dictio*], namely, a verb of past tense, and thus the word 'nothing' [*nullum*] alone, substantivated in the neuter gender, would be the subject, and then the proposition would be false, for it would be equivalent to 'Nothing is corrupted'. In the other sense 'corrupted is' can be taken as two words [*dictiones*], namely, 'is', a verb of present tense, and 'corrupted', a past parti-

126. Aristotle, *On Generation and Corruption* II.11.338b6–20.

127. The reason for this addition is that according to Buridan the form of the human body, the human soul, is not educed from the potency of matter, that is to say, it is not just a particular sort of organization of the human body as the animal soul is just a particular sort of organization of the body of a brute animal, and so the death of a brute animal is its total corruption, whereas the human rational soul survives the death of a human being.

128. This is because whichever horse we take, it exists.

129. Literally, 'Nothing dead is'. But since 'dead' in English is an adjective and not a past participle, as *mortuum* is in Latin, I chose 'corrupted' for a better match with Buridan's subsequent remarks.

ciple, and then 'corrupted' is the subject of the proposition, and thus it is to be conceded.

Second sophism: No man is dead

P.1 This is proved by induction across all men.

P.2 Again, by a syllogism in the first mode of the second figure: nothing dead is an animal; every man is an animal; therefore, no man is dead.

P.3 Similarly in the third figure, by a syllogism *ad impossibile:* every man is an animal; some man is dead; therefore, something dead is an animal. The conclusion is false; therefore, either one of the premises [is false], but not the major; therefore, the minor is false, which contradicts the sophism; therefore the sophism is true.

O.1 The opposite is argued, because the contradictory of the sophism is true, namely, 'some man is dead'; indeed; many are dead; therefore, etc.

I reply that the sophism is false.

P.1 And your induction is not sufficient if it concerns only the men that exist. Rather, it should concern men that existed, because the subject of the sophism is ampliated to the past by the predicate 'dead'.

P.2 Likewise, that syllogism in the second figure is not valid: for 'man' in the minor was not ampliated, and in the conclusion it is ampliated and distributed. But a less ample [term] does not imply a more ample [term] with distribution, just as this inference is not valid: 'Every man . . .; therefore, every animal . . .'.

P.3 Likewise, the syllogism in the third figure is not valid: for the middle term, namely, 'man', in the major proposition was distributed with a lesser ampliation—for only for present [men]—and in the minor it was taken indefinitely with a greater ampliation—for it was ampliated to past [men]. Therefore, the minor could be true for some past but not present [man], who did not fall under the distribution of the major; and so the extremes were connected for none of the same things in the middle term.[130]

And from the solutions of these two sophisms we should conclude as a corollary that the aforementioned modes of syllogizing in the first, second, and third figures are not formally valid. For they do not hold in every mat-

130. That is, the minor can be verified for past men only, the major for present men only, and so the middle term 'man' does not have a common suppositum in both premises for which both extremes would have to be verified in the conclusion.

ter, although they would always hold in cases where there is no ampliation. Indeed, perhaps this is also the case with the terms of the Holy Trinity, with which even the first mode of the first figure would not be valid in the following form of syllogizing: every God is the Son, and every Father of God is God; therefore, every Father of God is the Son.[131]

But to render these syllogisms formally valid, the propositions have to be formed with the addition 'that is', for example, 'Everything that is B is A; everything that is C is B; therefore, everything that is C is A'. And so perhaps the syllogism would be valid with the divine terms. For example, this would be a valid syllogism: everything that is God is the Son; everything that is Father of God is God; therefore, everything that is Father of God is the Son. But some people have denied the conclusion, since they denied the major; and others have conceded the major, and the whole conclusion, for the phrase [*dictio*] 'that is' substantivates in the neuter gender, and thus it is not personal but substantial. I do not assert anything concerning this issue, but leave it entirely to the masters or doctors of sacred theology.

Third sophism: Antichrist is

P.1 Proof: Antichrist is thinkable; therefore, Antichrist is.

P.1.1 The antecedent is clear[ly true]: for 'thinkable' is the same as 'can be thought of'. And this is true: Antichrist can be thought of, since by the name 'Antichrist' Antichrist is signified. Therefore, this is true: Antichrist is thinkable.

P.1.2 The consequence is also clear by the locus from the part of a whole-in-mode to its whole.[132] Nor can someone deny that locus in this case on the grounds that the determination is diminishing, for nothing is diminished by reason of its being thinkable, since God is the most thinkable, and since the locus from the part of a whole-in-mode would appear to be invalidated only by a diminishing determination, because it "takes away" from the concept of that to which it is added, as is commonly said, e.g., in the argument: 'Socrates is a dead man; therefore, Socrates is a man'.[133]

131. The three divine persons, the Father, the Son, and the Holy Spirit, are one by one identical with the same, one God, but none of them is identical with either of the two others.

132. See 6.4.6.

133. The adjective 'dead' is a diminishing determination of 'man', since it "takes away" from the concept of 'man' something that otherwise would belong to it, namely, being alive.

P.2 Again, Antichrist is in potentiality; therefore, Antichrist is.

P.2.1 The antecedent is commonly accepted.

P.2.2 The consequence is clear: for if I say 'Antichrist is in potentiality', I ask about that potentiality whether it is something or nothing. If it is something, then Antichrist is in something; therefore, Antichrist is. And if that potentiality is nothing, then we could equally say that Antichrist is in a chimera or that Antichrist is in nothing, and this is absurd.

P.3 Again, Antichrist is generable; therefore, by conversion, something generable is Antichrist, from which it follows that Antichrist is, for the predicate appellates its thing for the time of the verb.

I reply that the sophism is false.

P.1 And then, [in reply] to the first proof, I say that Antichrist is thinkable. But it does not follow that 'therefore, Antichrist is', for the predicate 'thinkable' is the name of a potentiality, which supposits for that which is able to be but is not, and which makes the subject supposit for the same [thing] that is able to be, although it is not. And in this way the subject and the predicate supposit for the same [thing]; therefore, the proposition is true. But in 'Antichrist is', the subject supposits for nothing, but since the predicate does not allow it to supposit for [things] that are not; hence the proposition is false.

But it is objected that there is no diminishing determination here that should invalidate the locus from the whole-in-mode.

Again, if the consequence were to be invalidated, then this would be on account of ampliation. But there is no ampliation here, for the subject is singular, the supposition of which cannot be ampliated, since it can supposit only for one thing.

To the first objection we have to reply that not only a diminishing but even an ampliating addition invalidates a consequence, if [the consequence] proceeds from a more ample undistributed term to a less ample one.

This is precisely why the complex term 'dead man' cannot apply to actually living men, only to past men, who were living but do not live anymore; and this is also why this consequence is not valid, since without this diminishing addition, the term 'man' in the consequent has to stand for actually living men. In general, a diminishing addition, which takes something away from the conditions of the strict applicability of a term, is for this reason also ampliative with respect to the extension of the term to which it is added, for the term with this addition can apply to things to which without this addition it could not apply. But then the point of the objection is that if we accept that 'thinkable' is not a diminishing addition, then adding it to a term cannot extend the applicability of the term in question in this way. Thus the locus in which we conclude from an inferior term to a superior term should be valid in this case, since then 'thinkable', i.e., 'thinkable being' is inferior to 'being', and so whatever is thinkable is a being; whence if Antichrist is thinkable, then Antichrist is a being, i.e., Antichrist is.

In reply to the second, I concede that there is no ampliation of the term 'Antichrist' properly speaking, nor is there a movement from a more ample term to a less ample one; but there is something that is worse, namely, a move from a term suppositing for something to one suppositing for nothing.

P.2 To the other, I concede that Antichrist is in potentiality only in the sense that Antichrist can be, and not in the sense that he is in a certain thing that can be called "potentiality." Therefore, this is an improper locution.

P.3 To the other I reply that this is not a valid conversion: 'Antichrist is generable; therefore, something generable is Antichrist'; for in the antecedent the term 'Antichrist' is permitted to supposit for things that can be but are not, and in the consequent it is not permitted to do so. But it [the antecedent] should be converted as follows: 'therefore, something generable is or can be Antichrist'. And 'Antichrist will be generated' should be converted into 'What will be generated is or will be Antichrist', just as 'A horse is dead' should be converted into 'Something dead is or was a horse'.

Fourth sophism: Every old horse will die

Assume it to be the case that among other things, there neither are nor will ever be any horses apart from two, namely, Tawny and Blackie, and that they are both young but growing old and will die. And then it is also assumed that God will miraculously conserve everything else to eternity and that henceforth nothing else is going to grow old or die.

P.1 And then the sophism is proved: for every horse that is or will be old will die, as is clear by the case; therefore, every old horse will die.

And the consequence is clear[ly valid, since it proceeds] from the exponent to what is expounded, or from something equivalent [to its equivalent].

O.1 But the opposite is argued: for every horse that will die is young, as is clear by the case; and every old horse will die, as is posited by the case; therefore, every old horse is young. This syllogism is valid in the first mode of the first figure, yet the conclusion is false and impossible; therefore, so is one or the other of the premises, but not the major—since it accords with the case—therefore, it must be the minor, and this was the sophism.

It is replied that the sophism, in the case posited, is true.

O.1 Nor is the argument to the contrary valid, for it is invalid on account of [the] appellation [involved]. For the term 'old horse' in the minor proposition appellates old age under disjunction to the future, and in the conclusion only for the present. Therefore [the argument] proceeds from a disjunction to one

of its members, and in this form a consequence is not valid. Hence, it is inferred as a corollary, just as it was inferred earlier, that these syllogistic modes are not formally valid unless the propositions are formed with the addition of 'that is'.

Fifth sophism: Something corrupted is to be generated

P.1 Proof: the predicate 'to be generated', since it is in the future tense, ampliates the subject so as to supposit for future things. Therefore, the proposition 'Something corrupted is to be generated' is equivalent to 'Something that is or will be corrupted is to be generated'. And this is true on account of the second member of the disjunction, for something that will be corrupted is to be generated, such as a horse that will be generated tomorrow. Therefore, the sophism is true. Similarly, it is argued that this is also true: 'Something to be generated is corrupted', for, because of the ampliation, it is equivalent to 'Something that is or was to be generated is corrupted', which is true of Aristotle's horse—for it was to be generated and is corrupted.

O.1 But Aristotle seems to have concluded the opposite at the end of bk. 2 of *On Generation and Corruption:*[134] for it is impossible for something corrupted to recur numerically the same; yet it would recur if it were to be generated; therefore, it is impossible that it should be generated, and so it is not to be generated.

O.2 Again, nothing that is corrupted is to be generated; but everything corrupted is corrupted; therefore, nothing corrupted is to be generated.

O.3 Again, the term 'to be generated' supposits only for things to be generated and the term 'corrupted' only for things corrupted. And no one thing is both corrupted and to be generated; therefore, in the given sophism the terms do not supposit for the same thing; therefore, it is false, since the proposition is affirmative.

O.4 Again, in the proposition in question, namely, 'Something corrupted is to be generated', the term 'to be generated' supposits only for future things, which neither are nor were; and the term 'corrupted' supposits only for things that were, for it is a past participle; therefore, the terms do not supposit for the same, whence the conclusion is the same as before.

134. Aristotle, *On Generation and Corruption* II.11.338b12–20.

I reply that the sophism is true, as has been proved.

O.1 To the argument on the opposite side I reply that this is true: 'Something corrupted can be generated', for what is or can be corrupted can be generated. And thus it is also true that something corrupted will be generated, for what is or will be corrupted will be generated. But the following are false: 'Something that is corrupted can be generated' or 'Something that is corrupted is to be generated'; these signify that something that first was generated would be generated a second time, and this is impossible naturally. And this fits in with Aristotle's way of talking about recurring.

O.2 To the other, I concede that this is true: 'Nothing that is corrupted is to be generated'; for the first 'is' impedes the ampliation of the term 'corrupted' to the future. And I also concede the minor, namely, that everything corrupted is corrupted. But [the conclusion] is wrongly inferred, for it should be inferred, as required by the major, with the addition of 'that is', namely, 'Nothing that is corrupted is to be generated'.

O.3 To the other I reply that it is true that in the aforementioned sophism the term 'corrupted' supposits only for things corrupted, but with ampliation to future things, that is, for things that are or will be corrupted. Therefore we should note that the following is not valid: 'It supposits only for things corrupted; therefore, it supposits only for things that are corrupted', just as this does not follow: 'It supposits only for men; therefore, it supposits only for things that are men'. For just as the terms 'understand' and 'signify' ampliate to past, future, and possible things, so too does the term 'supposit'.

O.4 To the other, in the same way, I reply that the term 'corrupted', because of the ampliation, supposits not only for things that are and were but also for those that will be and not yet are, because they will be corrupted.

But then you will say: "How will the mode of signification of the term 'corrupted' be preserved, given that it is in the past tense?" I reply that it will be preserved indeed, for the future things for which it supposits will be past by the time they will be corrupted. Therefore, if I say 'Aristotle was to be generated', the term 'to be generated', which is of future tense, retains its mode of signification, for at the time consignified by the term 'was' Aristotle was yet a future thing.

Sixth sophism: Young Socrates was going to argue

Assume the case that Socrates, who was young, is now old, and he has never argued nor is he arguing, but tomorrow he will argue.

P.1 Then the sophism is proved, for, because of the ampliation of the subject, the sophism is equivalent to the proposition 'Who is or was young Socrates was going to argue', and this is true; therefore, etc.

O.1 The opposite is argued: for whoever was going to argue, either argues, or argued, or will argue; young Socrates was going to argue; therefore, young Socrates either argues, or argued, or will argue.

O.1.1 The consequence is valid, and the conclusion is false; therefore one of the premises [is false]; but not the minor; therefore, the major, which was the sophism. Now, then, I prove that the conclusion is false: for by the case it is false that young Socrates argues or argued. But it is also false that young Socrates will argue, for this is equivalent to 'Who is or will be young Socrates will argue', the whole of which is false, as is clear by the case.

I reply that the sophism is true.

O.1 But concerning the disproof some people say that this syllogism is not valid, because in it a term from another category[135] is subsumed under the distributive [sign] 'whoever', which is distributive of substance, and this is not acceptable where there is ampliation. But, subject to better judgment, I believe that this reasoning, as far as the syllogism is concerned, is valid, for it is acceptable to subsume under a distributive [sign] of substance any term that is capable of being a subject, whether there is ampliation or not, as long as the ampliation is not changed in the premises and the conclusion. For example, the following is not valid: 'Whatever I saw I see; [it was] something white I saw; therefore, [it is] something white I see', for in the conclusion the ampliation is removed. But the following *is* valid: 'Whatever I saw I ate; [it was] something white I saw; therefore, [it was] something white I ate'. But in this case the ampliation is not changed.

For this reason we should know that in the proposition 'Young Socrates was going to argue', the subject is ampliated to past and to future things—I say 'to past things' because of the verb 'was' and 'to future things' because of the phrase[136] 'going to argue'. Therefore, this proposition is equivalent to 'Who is or was or will be young Socrates was going to argue'. And thus also in the major the term 'whoever' is ampliated to past and future things, and so too in the conclusion 'Young Socrates argued or argues or will argue' the subject is ampliated to past and future things because of the verbs 'argued'

135. This would be the term 'young Socrates', which may be construed as belonging either to the category of time, on account of the relatively short life span connoted by 'young', or to the category of quality, on account of the relatively more vigorous condition of a young organism, connoted by the same adjective.

136. In the Latin we have a future participle here, *disputaturus,* but English lacks the corresponding grammatical category.

and 'will argue'. Therefore, this conclusion is equivalent to 'Who is or was or will be young Socrates was going to argue', and this is true, and the whole syllogism is valid. Whence we have to note that the conclusion is a categorical with a disjunctive predicate. But the following disjunctive proposition is false: 'Young Socrates disputes or young Socrates disputed or young Socrates will dispute', for none of the categoricals of this disjunctive [proposition] preserves the ampliation of the premises. One omits the ampliation to the future, the other the ampliation to the past, and the third both. But if you were to insert into the categorical about the future the [kind of] ampliation that occurred in the premises, then it would be true, namely, 'Who is or was or will be young Socrates will argue'.

Seventh sophism: A non-being is understood

Posit that the proposition is affirmative with an infinite subject.

P.1 Then the sophism is proved: for such infinite terms are analyzed so that to say 'A non-man runs' is equivalent to saying 'What is not a man runs'. And thus to say 'A non-being is understood' is equivalent to saying 'What is not a being is understood'. But the second is true, for Antichrist, who is not a being, is understood.

O.1 The opposite is argued: for the term 'non-being' supposits for nothing, but a proposition is false if its subject supposits for nothing and if it is affirmative; therefore, etc.

I respond that the sophism is false, for the term supposits for nothing.

And this is clear in the following manner: for the verb 'to understand' or 'to be understood' ampliates supposition to past, and future, and even all possible things. Therefore, if I say, 'A being is understood', the term 'being' supposits indifferently for every present or past or future or possible thing. But the rule is that an infinitizing negation added to a term removes its supposition for everything for which it supposited and makes it supposit for everything for which it did not supposit, if there are any such things. Therefore, in the proposition 'A non-being is understood', the term 'non-being' does not supposit for some present, nor for some past, nor for some future, nor for some possible being; therefore, it supposits for nothing, and so the proposition is false. And I say that 'A non-being is understood' and 'What is not a being is understood' are not equivalent, for by the verb 'is' you restrict the infinity [*infinitatem*] to present things. Therefore, the supposition for past and future

[and possible] things remains, and thus this has to be conceded: 'What is not [a being] is understood'. If, therefore, we are to give an equivalent analysis of 'A non-being is understood', then it will be the following: 'What neither is, nor was, nor will be, nor can be is understood', and this is false, just as the sophism was. We should say the same about the proposition 'A non-being will be'. For it is false, although this is true: 'What is not a being will be'.

But there is a strong objection to this way of settling the matter [*determinatio*], for in the proposition 'What is not a being is understood' or even in 'What is not a being will be' the verb 'is' restricts the term 'what' so that it supposits only for things that exist [at present]. And then, since of everything that exists it is false to say that it is not a being, it follows that the whole subject 'what is not a being' implies contradiction, and therefore, it supposits for nothing; e.g., the whole [phrase] 'man who is not a man' supposits for nothing.

Also, 'Something that is not a being' supposits for nothing, but to say 'What is not a being' and to say 'Something that is not a being' amounts to the same; therefore, this is false: 'What is not a being is understood' or 'What is not a being will be', for the subject supposits for nothing.

To this I reply as before, that these propositions are true. For this reason we have to realize that such a proposition, namely, 'What is not will be' or 'What is not is understood', is not complete except on account of what is added [to it] in thought, and this is so on two accounts. First, because here the relative [pronoun] 'what' is posited without an antecedent. Second, there are two verbs here, for which a single [name in the] nominative [case] cannot provide a suppositum; therefore, we have to supplement it [as follows]: 'What is not will be', i.e., 'Something that is not will be'. But in this proposition, the term 'something' is not construed with the verb 'is' but with the verb 'will be'; therefore, it is not restricted to present things but is ampliated to future ones. Furthermore, although the relative [pronoun] 'what' [or 'that', *quod*] is construed with the verb 'is', nevertheless, it is not restricted by [this verb] to present things, for a characteristic feature of a relative [pronoun] is that it should supposit as does its antecedent. Therefore, the whole subject 'something that is not a being' does indeed supposit for something not present but future; therefore, the proposition is true.

And it can be said in the same way that this is true: 'A man who is not a man will be' or 'A man who is not a man is understood', for the first term 'man' does supposit for future men who do not now exist.

Eighth sophism: Everything that will be is

Now follows, in accordance with all this, the eighth sophism: 'Everything that will be is', or even 'Everything that will be is a being'.

P.1 It is proved from what has been said, for the word 'everything' is not construed with 'will be' but with 'is'; therefore, it is restricted to present things and is not ampliated to the future. And thus also the relative [pronoun] 'that' supposits in the same way; therefore, the whole subject 'everything that will be' supposits only for things that will be and already are. But of every such thing it is true to say that it is; therefore, this is true: 'Everything that will be is'. And we could argue in a similar manner that 'Everything that can be is' is true.

O.1 The opposite is argued: for something will be, e.g., Antichrist, what, however, not yet is. Therefore, not everything that will be is.

O.2 Again, everything that will be is; Antichrist will be; therefore, Antichrist is. The conclusion is false; therefore, so is either of the premises, but not the minor; therefore, the major, which was the sophism.

O.3 Again, these would appear to be equivalent: 'Everything that will be is' and 'Whatever will be is'; but the latter cannot be conceded as true; therefore, neither can the former.

I respond that the sophism is true.

This, however, is false: 'Whatever will be is'; since they [i.e., this proposition and the sophism] differ very much. For the word 'whatever' is here construed with the verb 'will be', and it is necessary to add in thought a relative [pronoun] that should be construed with the 'is', so that one has 'Whatever will be, that is'. And so the term 'whatever' is ampliated to future things, and, consequently, so is its relative, 'that'. And thus we have counterinstances to the proposition 'Whatever will be is' in all future things, that not yet are. But the case is just the reverse with 'Everything that will be is', for 'everything' is construed with 'is'; and so it is restricted to all the things that there are, and, consequently, the relative [pronoun] 'that' is restricted in the same way. Therefore, they supposit only for the things that there are, and every such thing is. Therefore, everything that will be is. And thus it is concluded that all such propositions are true, as with 'Everything that was is' and 'Everything that can be is'. But the following are false: 'Whatever was is' or 'Whatever can be is'. And since for those who did not consider the said diversity carefully these appeared to involve equivalences, it came about that at first sight the former appeared to them to be false, just as are the latter. And the case is similar with particular propositions. Thus I say that this is true: 'Something will be that is not', but this is false 'Something that will be is not'.

Then to the arguments on the opposite side:

O.1 To the first, I concede the antecedent, namely, 'Something will be that not yet is', and I deny the consequence. Rather, one should conclude 'therefore, not:—whatever will be, that is'.

O.2 To the other, I reply that the syllogism is not valid, for you do not subsume the minor under the distribution of the major, for in the minor, because of the ampliation, you pick out a future thing, whereas in the major the distribution covered only present ones. But if you were to say in the minor, restricting it to present things, that Antichrist is someone who will be, then the syllogism would conclude of necessity, but the minor would be false.

O.3 To the last argument it has already been replied that those [propositions] are not equivalent.

Ninth sophism: Man and risible are convertible

Ninth sophism: 'Man and risible are convertible', i.e., the terms 'man' and 'risible' are convertible.

P.1 Proof: 'risible' is posited to be the property [*proprium*] of 'man', and a property is convertible with the subject of which it is a property.[137]

O.1 The opposite is argued: of some things 'risible' is truly predicated of which 'man' is not truly predicated; therefore, they are not convertible.

O.1.1 The consequence here seems to be self-evident. The antecedent is proved: 'risible' is the name of a potency—for it signifies the same as 'capable of laughter'—therefore, it ampliates to things that can be but are not. Hence, Antichrist is risible, for he can laugh, indeed, he will laugh many times, as a matter of fact, which he would not do if he could not laugh. And so then, of Antichrist and of all men to be generated the term 'risible' is truly predicated, for every man to be generated is risible; but of none of them is the term 'man' predicated, for no man-to-be-generated is a man.

I reply with some conclusions.

137. Of course, 'property' here is to be understood in the technical sense introduced in 2.5.1.

First conclusion

The first is that the above terms [i.e., 'man' and 'risible'] are not converted in such a way that they would be universally and truly affirmed of each other with the mediation of the verb 'is', without any addition; for although every man is risible, not everything risible is a man, since, as has been argued, Antichrist is risible, but he is not a man.

But some people object, for it would seem that this is true: 'Everything risible is a man', for 'risible' is restricted by the verb 'is' to supposit only for the things that there are. Therefore, to say 'Everything risible is a man' is tantamount to 'Everything that is risible is a man', but the latter is true; therefore, the former is true, too.

I respond that a past participle that is the subject in a proposition cannot be restricted by the copula or the predicate of the proposition in such a way that it would not supposit for past things, for it does not lose its mode of signifying because of the copula or the predicate. In the same way, the name of a potency is not restricted either in such a way that it would not supposit for things that can be, although they are not. Nevertheless, any term can be restricted by an added determination, as when I say 'A white man runs', 'man' does not supposit for all men, but only for those that are white. Likewise, if I say 'A man who yesterday ran eats', then 'man' with this addition does not supposit for all men, but only for those that yesterday ran. In the same way we should say that in the proposition 'Something risible that is is a man', 'risible' is restricted by the determination 'that is' added to it, whereas it is not so restricted in 'Something risible is a man'.

Second conclusion

The second conclusion is that these said terms are converted by being predicated universally of each other with the addition of 'that is', for that addition removes the supposition of 'risible' that went beyond the supposition of man. For example, everything risible-that-is is a man and every man-that-is is risible.

Third conclusion

The third conclusion is that these said terms would also be convertible with the addition of 'that was' with respect to the verb 'was', and with 'that can be' with respect to the copula 'can be', and with the addition of 'that will be' with respect to the verb 'will be'. For example, everything risible-that-was was a man and conversely, and everything risible-that-will-be will be a man and conversely, and everything risible-that-can-be can be a man and conversely.

Fourth conclusion

The fourth conclusion is that just as something is risible that is not a man, so something was risible that was not a man, and something will be risible that will not be a man, but whatever can be risible can be a man. And this fourth conclusion is obvious: for to whatever extent the term 'risible' is ampliated, then to that same extent the term 'man' is ampliated by the verb 'can be'. The first clause and the second are clear, for Antichrist is risible and was risible, yet he neither is nor was a man. The third clause is also clear because many people can be created who will never be created, and just as they can be, so can they laugh, and so they are risible and they will be risible, for it is not necessary that tomorrow the power to create them will decline; therefore, they will be risible, and they will never be men.

Fifth conclusion

The fifth conclusion is that the following are true: 'Everything that is risible is a man', 'Everything that was risible was a man', and 'Everything that will be risible will be a man'; but not so with 'whatever'. And this can be made clear on the basis of the preceding sophism.[138]

138. In, say, 'Whatever risible is a man', the ampliation of 'whatever' is not removed in the way the ampliation of 'everything' and of 'that' is in 'Everything that is risible is a man'.

Tenth sophism: Socrates will die today

Let us posit that throughout this entire day, and indeed through the whole ensuing year, he lives in good health, and then he dies.

P.1 Then in terms of the case the sophism is obviously false: for by the case neither today nor tomorrow will he die.

O.1 But I argue that the sophism is true: for the proposition 'Socrates will die tomorrow' is a proposition about the future; therefore, it is true if sometime in the future a proposition about the present corresponding to it will be true. But that will be so, for it was posited that he will die on the first day of the next year. Then on that day it will be true to say about the present 'Socrates dies today'; therefore, the sophism is true.

I respond that in accordance with the posited case the sophism is false, for the term 'today' is a discrete term suppositing only for this indicated day, just as 'this man' supposits for this indicated man. Therefore, saying 'today' is equivalent to saying 'on this day'. Hence, pointing out Socrates, the term 'this man' supposits for Socrates and cannot supposit for something else where that act of pointing is concerned; therefore, it cannot be ampliated by some verb or predicate to supposit for something else. Also, in the same way, indicating this day, the term 'today' cannot by some verb or predicate be ampliated so that it would be taken for another day. But since tomorrow you will indicate another day by the term 'today', then it supposits for another day, just as the term 'this man' would never supposit for anything other than Socrates as far as the indication of Socrates is concerned, whether with respect to a verb of the past or the future or of any other tense. But when indicating Plato, the spoken term 'this' would supposit already for Plato and not for Socrates. And thus the argument that the sophism was true was not valid, since the supposition of the term changed because of the difference of the indication, nor is ampliation of any use here because of the singularity of the term.

Chapter 6: On the fact that utterances signify by convention

The sixth chapter will be about the fact that utterances signify by convention. And we formulate some sophisms concerning this point.

First sophism: You will be a donkey

P.1 Proof: tomorrow this will be true: 'You are a donkey'; therefore, today this is true: 'You will be a donkey'.

P.1.1 The consequence is clear from the order of present, past, and future: for what now is present, afterwards will be past, and before, it was future, and this also holds for propositions. For if it is true that you will run, then sometime it will be true that you run and conversely.

P.1.2 But the antecedent of the main consequence is proved by positing the case that you and others want to change your name by convention and want to give you the name 'donkey'; then it is obvious that tomorrow this will be true and to be conceded by you: 'You are a donkey'. And that it is permitted to change names in this way is clear for several reasons. First, from the case of Saint Paul, who first was called Saul and later Paul. Second, from the case of popes, for when someone becomes pope, his name is changed at will and by convention. Third, because it is also customary sometimes to change the name at confirmation. Fourth, because names signify by convention, and it does not seem that they should signify by the convention of those who existed rather than of those who exist, especially when things that now exist are concerned. Fifth, because it is the regular practice of Aristotle and others to impose new names on things in their disputations, as for example when one lets the acute angle be called A and the straight line be called B.

O.1 The opposite is argued: for I believe that you would not concede this, namely, 'You will be a donkey'. For then by the same token you would have to concede that every man will be a donkey and that God will be unjust; at least you would have to concede the heretical claims about the possibility that God can be unjust and that a donkey can be God, and that this is possible: 'God will not be God', and perhaps that a chimera will be God. Indeed, in this way every proposition is possible or contingent and none is necessary or impossible.

I respond by positing some conclusions concerning this matter.

First conclusion

The first is that an utterance like 'A man is a donkey' can be true, by positing that, by a deluge or by divine power, the whole of the Latin language is lost, because all those who knew Latin are destroyed, and then a new generation following them impose by convention the utterance 'man' to signify

the same as that utterance signifies to us now, and the utterance 'donkey' to signify the same as the utterance 'animal' signifies to us now. This case is possible. Therefore, nothing impossible should follow from positing it. But it does follow that this spoken proposition or one similar to it in utterance would be true, namely, 'A man is a donkey', for it would designate a mental [proposition] that is now signified to us by 'A man is an animal'; therefore, it would designate a true mental [proposition], and it would be subordinated to a true mental one. But a spoken proposition is said to be true because it is subordinated to a true mental one (or false, because it is subordinated to a false one); therefore, it is not impossible that such [a proposition] be true.

Second conclusion

The second conclusion is that it is impossible for 'A man is a donkey' (or for an utterance like this) to be true retaining entirely the signification that it now has for us, for then it would always designate a false mental [proposition], just as it does now; therefore, it would always be false.

Third conclusion

The third conclusion is that the proposition 'A man is a donkey' is impossible, for when it is propounded now, it is propounded with the signification that it has now, and according to that it designates an impossible mental proposition; but a spoken or written proposition is said to be impossible because it designates an impossible mental one, or possible because it designates a possible one, or necessary because it designates a necessary one. Therefore, that proposition is absolutely impossible.

Fourth conclusion

The fourth conclusion is inferred that numerically the same inscription that now is an impossible proposition can be necessary. For let the proposition 'A

man is a donkey' be written in stone. This inscription now is an impossible proposition; however, if the language were to change in the manner described before, namely, so that the term 'donkey' would then signify the same as 'animal' signifies to us now, while the stone and the writing on it would be preserved, then that inscription would be a necessary proposition, for it would designate a mental proposition that is necessary.

Fifth conclusion

Fifth, it seems to me that it must be inferred that the same utterance or inscription, or one that is similar to it, is simultaneously a true proposition for me while being a false proposition for you, as in the case of the proposition 'Man is a species'. For you do not take its subject in material supposition but in personal supposition, and thus it is false for you. And I take it in material supposition, as was posited by Porphyry;[139] and thus it designates for me a true mental one; therefore, it is true for me. So propositions do not always have to be taken in the sense that would be most in accordance with their proper usage [*magis esset de proprietate sermonis*], but it is often appropriate to take them in other senses, in keeping with which they have been propounded by our masters [*doctoribus*]. But even in another case, which is more to the point, if it is written on the wall that a man is a donkey, then it is false for me, having this language, and it is true for you, assuming that you have some other language in which the term 'donkey' signifies precisely the same as what the term 'animal' signifies to us. Also, it commonly happens in obligational disputations in schools that the master stipulates that for the duration of the disputation the term 'donkey' should signify for the disputants precisely the same as that which the term 'animal' signifies for us when used in accordance with its common signification; and the respondent and the others agree. Then the proposition 'A man is a donkey' is true for them and is to be conceded by them, but a proposition similar in utterance would be totally false and impossible were it propounded outside of the context of such an obligation in the church of Notre-Dame[140] to those there present.

139. Porphyry, *Isagoge* 2.20, 4.26–27.

140. As Joël Biard remarks in his note to this passage, "'Ecclesia beatae Mariae' without a doubt denotes Notre-Dame."

Sixth conclusion

The sixth conclusion is that a spoken proposition, outside of the context of such an imposition or obligation, is to be taken to be true if it is true according to the signification that it commonly has for the listeners and speakers of the language, and false if false.

And then I respond to the sophism that it is false. And when it is said that tomorrow 'You are a donkey' will be true, I concede this concerning a similar utterance. But that [utterance] will not hold in terms of the signification that the term 'donkey' now has and according to which the sophism is at present propounded. Therefore, [the conclusion] 'You will be a donkey' does not follow.

Second sophism: Ba will be baptized

I posit the case that the utterance 'Ba' is not significative, so that it has not been yet imposed to signify something, but that tomorrow this boy will be baptized and he will be given the name 'Ba' as his proper name.

P.1 Then the sophism is proved: for this boy will be baptized tomorrow; and he will be Ba; therefore, Ba will be baptized. This seems to be an expository syllogism.

P.2 Again, what is or will be Ba will be baptized; therefore, Ba will be baptized.

P.2.1 The consequence is clear: for it proceeds from the exponents to what is expounded. The antecedent is also clear: for this boy who tomorrow will be Ba will be baptized, given the case.

O.1 The opposite is argued: for a proposition, if it is true, should be true according to the signification that it has when it is propounded, and not according to one that it will perhaps have but does not yet have, as has been said concerning the previous sophism; but 'Ba' now does not signify this boy, as is clear by the case; therefore, it is not true for him, nor is it true for another; therefore, it is not true.

I reply that a proposition, unless its terms are taken materially, is never to be said to be true or false except according to the signification that it and its terms have when it is propounded, and not according to the signification it may have or perhaps will have but not yet has. For otherwise one would have to say that 'God can be unjust' or 'A man can be a donkey' is true, for the signi-

fications of names can be changed. And to concede this would be absurd and heretical. And then I say that if the syllable 'Ba' supposits materially for itself or for its concept, then an utterance or inscription like 'Ba will be baptized' is an obviously false proposition. But if it is not taken materially, then I say that in the case posited the utterance or inscription 'Ba is baptized' is neither true nor false, for it is neither a proposition nor a sophism, nor is it even an expression, since an expression is defined as being a conventionally significative utterance whose parts are separately significative. Therefore, when you say 'This boy tomorrow will be Ba', I say that if the utterance 'Ba' supposits materially, then this [proposition] is to be denied as false; and if it does not supposit materially, then the whole of what is said, namely, 'This boy tomorrow will be Ba', is neither true nor false, and is neither to be conceded nor denied, just as if you were to say 'bu ba'. Still, some part of what was said, namely, what remains after removing the part 'Ba', would indeed be a true proposition, namely, that this boy tomorrow will be. And the same should be declared about the utterance or inscription 'What is or will be Ba will be baptized'.

But then you will pose two questions. First, will not the proposition 'This boy is Ba' be true tomorrow? Second, if someone says that this boy tomorrow will be called Ba, does not he say something true?

To the first I reply that the utterance or inscription 'This boy is Ba' tomorrow will be true if it is uttered or written [then], or also if it is written now and remains. But then it is clear that you take the whole [phrase] 'This boy is Ba' materially. Likewise, to the second question I reply that he would say something true, but he also would take the utterance 'Ba' materially. For this boy will be called Ba, i.e., he will be called by the name or the utterance 'Ba'; therefore, 'Ba' taken materially in this way can indeed be a part of a false or true proposition.

But you will still object by pointing out that Aristotle syllogized in bk. 1 of the *Prior Analytics* as follows: 'Every B is an A, and every C is a B; therefore, every C is an A'; so is not this a valid syllogism, and, consequently, are there not premises and a conclusion that are true or false propositions, despite the fact that the terms are not significative?[141]

I respond that if those letters are taken materially, i.e., for themselves or for their concepts, then there are no propositions here, strictly speaking, and there is no syllogism here, either. But we use such letters with the intention of designating that if in place of those letters we were to put significative terms able to be a predicate and able to be a subject, then whatever those terms were

141. Aristotle, *Prior Analytics* I.4.25b39–40.

to be, the syllogism would be valid. And only this is what Aristotle intended, and this is what we should intend now.

Third sophism: The utterance 'A' is a proposition

Let us posit the case that we agree in a disputation that the utterance 'A' should signify entirely and precisely whatever the utterance 'A man runs' signifies for us, so that these utterances are related to each other as synonyms.

P.1 Then the sophism is proved thus: the utterance 'A man runs' is a proposition; therefore, the utterance 'A' is a proposition.

P.1.1 The consequence is obvious, for the utterances 'A' and 'A man runs' are synonymous and equivalent given the case, and whatever is truly asserted of one of the equivalents is also truly asserted of the other.

O.1 The opposite is argued. Every proposition is an expression, and the utterance 'A' is not an expression, since it does not have separately significative parts; therefore, it is not a proposition.

O.2 Again, one would ask what its subject and what its predicate were, and they could not be specified.

I respond that the utterance 'A' in the case posited and conceded, taken significatively, cannot be the subject of a proposition, just as neither could the utterance 'A man runs'. For according to the grammarian, although an infinitive expression [*oratio infinitivi modi*] can indeed supply a suppositum for the verb, even taken significatively, as when we say that for Socrates to study is good for him, nevertheless it is not grammatical to say: 'Socrates runs is good'. Therefore, such an expression is neither true nor false, nor is it a proposition, except by taking 'Socrates runs' materially, in the sense that the expression 'Socrates runs' is good. But then it is obvious that in the sophism 'A' was not taken significatively but materially. But if we were to ask whether the utterance 'A man runs' is a proposition, it is clear that 'A man runs' is here taken materially.

And then it is obvious that where this sophism is concerned the case is the same as if we were asking whether the barrel hoop hanging in front of the tavern is one proposition.[142] And it would seem that it is, for it is equivalent

142. The example crops up already in Petrus Abaelardus, *Glose super Periermeneias, Logica "Ingredientibus,"* in *Philosophische Schriften,* ed. B. Geyer (Münster, Bayerische Akademie, 1927), p. 335, but recurs in Martin of Dacia, Roger Bacon, and Ockham as well.

in its signification to the conventionally significative utterance that someone might yell at the entrance of the tavern: 'Wine is sold here!', and this is one proposition. I say, therefore, that if an utterance or some other conventionally instituted sign is said to be a proposition because it designates or constitutes for us a mental proposition, so that nothing more is required, then in the case posited the utterance 'A', or the barrel hoop hanging in front of the tavern, or the putting of the finger to the forehead among nuns [*moniales*] would be a proposition—for this is how nuns talk to each other without speech or writing. But we should say that for [the constitution of] a spoken proposition, strictly speaking, more is required, namely, that the subject of the mental proposition be designated by one utterance, the predicate by another, and the complexive concept that is the copula by a third, or at least the copula and the predicate [taken] together by one verb. And thus I would say that the utterance 'A' is not a proposition, and neither is the barrel hoop before the tavern. In the same way, although the utterance 'vacuum' and the utterance 'place not filled with body' have the same signification in the mind, and also with respect to the things conceived, yet the utterance 'place not filled with body' is called an expression [*oratio*], but the utterance 'vacuum' is not.

P.1.1 Then, as to the argument, when it was said that if utterances are synonymous then whatever is said of one is also said of the other, I concede it if they are taken significatively. But if they are taken materially, then this need not be true. For example, even if 'Marcus' and 'Tullius' are posited to be synonymous names, it still does not follow that if the name 'Tullius' is trisyllabic, then 'Marcus' is also trisyllabic.

Fourth sophism: It is within our power that a man should be a donkey

P.1 Proof: you and I dispute, and we can use words as we please, given that we are willing to agree on their signification—for this is the manner in which disputants often agree that 'A' should signify man and 'B' should signify donkey. Let us then agree that in our present disputation, the term 'man' will signify for us just as the term 'whiteness' commonly signifies for others, and the term 'donkey' will signify for us just as the term 'color' commonly signifies for everybody else—and this is within our power. Therefore, the proposition 'A man is a donkey' will for us be synonymous with and will make for us the same sense [*intentio*] as the proposition '[A] whiteness is a color' does for

others. But the proposition '[A] whiteness is a color' is a true proposition for others; and so as well the proposition 'A man is a donkey' is a true proposition for us, so that this [namely, that this is true] is within our power. But this inference is valid: "'A man is a donkey' is true; therefore, a man is a donkey"; whence it is within our power that a man should be a donkey. And if you were to say that it is true for us, but not true absolutely, I posit the case that there are no other people but those who now exist in Paris, and all others are destroyed. Then all those can agree on the given signification and afterwards teach their children that signification; and thus 'A man is a donkey' will be true absolutely for all. Then, therefore, we argue thus: "'A man is a donkey' is true" implies 'A man is a donkey'; therefore, the person in whose power it is that 'A man is a donkey' is true also has it in his power that it be the case that a man is a donkey; but the first is within the power of those of us who are in Paris; therefore, so is the second.

O.1 But the opposite is clear, for then by the same token it would be within our power that God or the heavens or the earth should not exist, but these claims are absurd and heretical.

I respond in accordance with what was said earlier that the sophism is false, for when we use the terms 'man' and 'donkey' significatively, we use them according to the signification that they now have. But according to the signification they now have this is impossible: 'A man is a donkey'; therefore, for us it is not possible that a man should be a donkey. But if we use the terms 'man' and 'donkey' materially, then it is to be conceded that it is possible for us to change their signification and to render the spoken proposition 'A man is a donkey' true.

P.1 And when you argue that "'A man is a donkey' is true; therefore, a man is a donkey" is valid, I concede this, but the antecedent is false. But when you say: 'If it is not true, it nevertheless can be true', I concede that it or a similar one [can be true]. And when you conclude "therefore, a man can be a donkey or at least this is possible: 'A man is a donkey'," I deny the consequence, for we can change the signification but not the thing signified. Therefore, when I say 'A man is a donkey' or 'A man can be a donkey', I use these terms according to the signification that they now have, according to which these or similar propositions cannot be true, whence they are absolutely impossible. And although this is valid: "A proposition such as 'A man is a donkey' is true; therefore, a man is a donkey," nevertheless, this is not valid: 'Such a proposition will be true; therefore, a man will be a donkey', for in the meantime the signification has changed, and then that proposition will not be propounded with the signification with which this proposition 'A man is a donkey' is now propounded. Indeed, I do not concede that the following is a valid consequence: "A spoken proposition such as 'A man is a donkey' is true; therefore, a man

is a donkey," for perhaps it is true in another language, but the consequence is not valid, since we formulate the consequence in our language taking the terms significatively and according to the significations they have for us.

Aristotle in the *Categories* accepts such a consequence, but with the assumption that the antecedent is true according to the signification in terms of which the consequent is uttered.[143]

Fifth sophism: You are a donkey or you are not a man

I prove this by positing the case that if 'A' is placed in any true proposition, then it signifies a donkey, so that it supposits for a donkey and nothing other [than a donkey], and if it is put in a false proposition, then 'A' signifies a man, so that it supposits for a man and nothing other [than a man].

P.1 Then the sophism seems to be obvious: for either you are A or you are not A—this disjunction is clear on the basis of the rule of contradiction. But if you are A, then it follows that the following is true: 'You are A'; therefore, you are a donkey. And if you are not A, then it follows that the following is false: 'You are A', whence the following is false: 'You are a man'; therefore, you are not a man.

P.2 Again, the proposition 'You are A' is either true or false. If it is true, then it follows that you are a donkey; if it is false, then it follows that you are not a man; therefore, etc.

O.1 The opposite is argued: since this is a disjunction, its contradictory is a conjunction consisting of the contradictory categoricals,[144] namely, 'You are not a donkey and you are a man'; but this is true; therefore, the sophism is false.

I reply that the sophism is false.

P.1 As for the proof, I reply briefly that the case is impossible, for it posits that the same term has one signification in one of the contradictories and another in the other, and this is impossible, for then the contradictories would not be contradictories. And another reason why the case is impossible is that a proposition presupposes the significations of its terms. For the terms have to be imposed to signify before a proposition can be formed with them. Therefore, it is impossible that because of the placing of a term in one proposition

143. Aristotle, *Categories* 12.14b14–18.

144. Buridan states here the rule that in modern logic has come to be known as de Morgan's Law: $\sim(p \vee q) \leftrightarrow \sim p \,\&\, \sim q$.

rather than in another the term should have different significations, except in terms of a new imposition, or equivocally. But the case posits the contrary, whence it also follows that the sophism is false.

Sixth sophism: This proposition can be true: 'A man is a non-man'

P.1 Proof: the term 'man' can signify everything that is not a man so that it supposits precisely for everything that is not a man.

P.1.1 This is clear, because its signification can be changed so that it signifies precisely as the term 'other than a man' now signifies; therefore, it would then supposit precisely for everything that is not a man, for this is how the term 'other than a man' supposits. Then, therefore, since this singular proposition about possibility is true, namely, "The term 'man' can supposit for everything that is not a man', let this be posited into actuality tomorrow. Then this will be true: "The term 'man' supposits for everything that is not a man'; therefore, taking that term significatively, this will be true: 'A man is other than a man', for this is affirmative, and, in terms of the case, its terms supposit for the same. And this entails that a man is a non-man, for 'non-man' and 'other than a man' are equivalent.

O.1 The opposite is argued, for this is valid: 'A man is a non-man; therefore, a man is not a man'; but [the consequent] is impossible; indeed, it cannot be true, at least while retaining the same significations of the word 'not' and of the word 'is', however much the signification of the word 'man' may be changed.

I respond that the sophism is false, at least in the sense that there is no period of time for which it is true, while one retains the significations of the words 'is' and 'not'.

P.1 In response to the argument, I concede that the word 'man' can supposit for everything that is not a man by changing its signification.

P.1.1 Further, when you say: "let this be posited into actuality tomorrow," I agree. But I declare that this positing into actuality is not expressed by the proposition "The term 'man' supposits for everything that is not a man," for the term 'man' taken significatively in the predicate position has changed its signification; therefore it does not supposit for the same thing[s] that it supposited for in the proposition about possibility. Whence it is clear that in expressing the positing into actuality it is necessary to exchange the utterance 'man'

in the predicate for one that would supposit for the things that were supposited for by the term 'man' earlier, for example, by saying that the term 'man' supposits for everything for which then the term 'non-man' supposited,[145] or by saying that the universal [proposition] should be reduced to singular ones, indicating [the singulars] by 'this'.

Seventh sophism: You do not know whether 'A man is a donkey' is true

P.1 Proof: it would be possible that in another language unknown to us the spoken expression 'A man is a donkey' would signify entirely [the same] as the expression '[A] whiteness is a color' signifies for us. And thus for them it would be true just as '[A] whiteness is a color' is true for us. Since, therefore, you do not know whether this is so, you do not know whether that [proposition] is true.

O.1 The opposite is argued: for if you do not know whether it is true, you should not deny it but doubt it. But then, by the same token, you should deny nothing, which is unacceptable.

I reply briefly that the sophism is true, speaking about such [a proposition exclusively] with respect to the utterance. Nevertheless, I do know that the proposition 'A man is a donkey', which is propounded among us, is false and impossible and not true, for we propound it with a signification in terms of which no such [proposition] can be true; therefore, we should firmly deny it. But should [the proposition] "'A man is a donkey' is true" be propounded to us, insofar as it concerns the utterance ['A man is a donkey'], we should not deny it but rather doubt it.[146]

145. The point here seems to be the following. If 'man_1' is 'man' with its original signification, and 'man_2' is 'man' with its new signification, in which it is equivalent to 'not a man_1' (that is to say, 'man_2'='not a man_1'), then "the positing into actuality" of the proposition about possibility, namely, "The term 'man' can supposit for everything that is not a man', can be expressed only by "The term 'man_2' supposits for everything that is not a man_1," i.e., by "The term 'man_2' supposits for everything that is [a] man_2."

146. The reason is that as far as exclusively the utterance is concerned, we may not know whether in another language it expresses a mental sentence that is true.

Chapter 7: On the measure according to which a proposition is true or false

The seventh chapter is about the measure according to which a proposition is to be taken to be true or false. And I propound some sophisms.

First sophism: No spoken proposition is true

P.1 Proof: whenever [such a spoken proposition] is not, it is not true; but it never is; therefore, it is never true.

P.1.1 Proof of the minor: there is never a proposition without a subject or without a predicate; therefore, it never is except when both its subject and predicate are; but they never are, for when the subject is, the predicate is not yet, and when the predicate is, then the subject is no longer, but it is gone;[147] therefore, etc.

O.1 The opposite is absolutely to be conceded.

We should note that Aristotle made a similar argument in bk. 4 of the *Physics* concerning time,[148] arguing that it is not, for the future time is not yet, and the past time is no longer, and the present time, since there is no indivisible instant, is composed of part of the past and part of the future, which, as has been said, are not. But there is no whole such that its parts are not; therefore, no time is. And Aristotle responds that time is, though not the whole together, but in succession, one part after the other. And when it is argued that the past is not and neither is the future, I concede it, talking about past or future time absolutely. But the present time is, and is composed of parts that also are, though they are not together, but one earlier and another later. Nor is some part of the present time past or future, speaking about past and future absolutely; indeed, each part is present, although one is earlier and another is later.

But then you ask: 'How long is the present time, since there is no indivisible instant?', given that this is here to be assumed and to be shown in [connec-

147. By the time one utters the predicate the subject is not being uttered anymore, and since its being is its being uttered (given that it is a spoken sound), by that time the subject is gone.

148. Aristotle, *Physics* IV.10.217b32–218a30.

tion with] bk. 6 of the *Physics*.[149] And I say that it is not determined for us how much time we ought to use as the present, but we may use as much as we want. For we call this year the present, and this day the present, and this hour the present, and if we use this day as the present, then the first hour is and the noon hour is and the vesper hour is, but successively. If, however, we use only the noon hour as the present, then we say that the first hour is past and is no longer, and the vesper hour is future and not yet is. And this assumption should be clarified to a greater extent in [connection with] books 4 and 6 of the *Physics* than it is here.[150]

And so then, with this having been noted, we have to say that the sophism is false. Indeed, the spoken proposition and its parts are, but are not together; rather, the subject is earlier, and the predicate is later.

P.1 But you object that when the subject is, then the predicate is not. I grant this, but it is also true that when the subject is the predicate also is, given that the term 'when' is taken here indefinitely for some time, for example, for the hour in which both the subject and the predicate are. Therefore, we truly say that when the subject is, the predicate is, but, also, that in some part of that hour in which the predicate is not, the subject is; so it is true that when the subject is the predicate is not. For indefinite affirmatives and negatives can be true together, but the following universals should be denied: 'Whenever the subject is, the predicate is not' as well as 'Whenever the subject is, the predicate is'.

Second sophism: Nobody can contradict my proposition

P.1 Proof: if I say: 'Socrates runs', you do not know which proposition it is appropriate for you to say until I have spoken; therefore, you cannot contradict me until I have spoken, and then you cannot contradict, because this cannot be done at the same time, as is required for contradiction. Indeed, if, wanting to contradict, you say that Socrates does not run, it may be the case that I said something true and you also say something true, for when I spoke, he

149. Ibid., VI.3.234a9–23; Buridan, *Quaestiones super octo Physicorum libros Aristotelis,* bk. 6, q. 4.

150. Aristotle, *Physics* VI.3.234a9–23; Buridan, *Quaestiones super octo Physicorum libros Aristotelis,* bk. 6, q. 4.

was running, and when you speak, he is not running; but a true proposition never contradicts a true proposition.

O.1 The opposite is argued: this contention would abolish the meta of refutation.[151]

I reply that the sophism is false.

And it is not necessary to respond to the argument, as some have claimed, that you do not contradict me by saying that Socrates does not run, but rather by saying that Socrates did not run when I said he ran. For this is not an acceptable answer, since contradictories have to have the same subject and predicate, under similar circumstances; therefore, we have to say that contradictory propositions have to have the same subject and predicate in utterance and also in intention. Therefore, in intention I have to refer the verb of my proposition to the same time as that to which you referred the verb of your proposition, so that the intention should be to deny what you affirmed, or conversely [to affirm what you denied], for the same time, even if that time coexisted with your proposition and not with mine. For I speak with this intention, as if I were speaking at that time, and this is allowed so that we can relate to the same intention. This is often the case in the Holy Scripture; for we say that Christ is born today, or will be born tomorrow, speaking with the intention as if we were in the time when he was born.

Third sophism: The proposition 'Socrates is sitting' is true at a time throughout which Socrates is not sitting

P.1 This is proved in terms of the determination of the preceding sophism. For I posit the case that you say: 'Socrates is not sitting', and you treat as the present only the time that coexists with your proposition, and that during that time he was sitting, so that your proposition is false; and let that time be called A; further, let the time immediately following it, at which I could contradict you, be called B, and that during the entire time B Socrates is standing and not sitting. Then I contradict you at the time B, when I say 'Socrates is sitting'. And it is also clear that this proposition of mine is true, for it contradicts yours, which is false. But it is not true except when it is; and it is, though not during [the time] A; therefore, it is true at the time B; however, Socrates is assumed

151. See 7.1.5.

to stand and not to sit during the entire time B; therefore, the sophism was true.

O.1 The opposite is argued: for then it would not be a valid consequence [to assert] that the proposition 'Socrates is sitting' is true; therefore, Socrates is sitting. But this is the opposite of what is intended by Aristotle in the *Categories,* in the chapter on priority.[152]

I briefly reply that the sophism is true and correctly proved.

And to the authority of Aristotle I reply that "The proposition 'Socrates is sitting' is true; therefore, Socrates is sitting" is indeed valid, but only as long as in the consequent we take the time consignified by the verb 'is sitting' for the time *for* which the proposition is true, and not for the time *at* which it is true, unless the former and the latter [times] are the same. Therefore, although the proposition 'Socrates is sitting' was true *at* the time B, this was [the case] *for* the time A.

Fourth sophism: This conjunction is true: 'Socrates is sitting and Socrates is not sitting'

P.1 This is proved from the foregoing: for whenever Socrates is standing, he is not sitting; therefore, if this is true: 'Socrates is sitting and Socrates is standing', then this is also true: 'Socrates is sitting and Socrates is not sitting'. But this is true: 'Socrates is sitting and Socrates is standing', for, since the time we use as the present is divisible, Socrates during the first part is sitting and during the second part is standing; therefore, he is sitting and standing, although earlier and later.

P.2 Again, this is true: 'Socrates is sitting and Socrates is non-sitting', although [with respect to] earlier and later. But 'Socrates is non-sitting', which is an affirmative with an infinite predicate, entails the negative with a finite predicate, namely, that Socrates is not sitting, as is stated in *On Interpretation.*[153] Therefore, this is true: 'Socrates is sitting and Socrates is not sitting', which is the sophism.

O.1 The opposite is clear given that no conjunction of contradictories is true, since one of the contradictories has to be false. The sophism is such; therefore, it is false.

152. Aristotle, *Categories* 12.14b14–18.

153. Aristotle, *On Interpretation* 10.19b26–29, 20a20–23.

I reply briefly that this is true: 'Socrates is sitting and Socrates is standing' and so is this: 'Socrates is sitting and Socrates is non-sitting', as has been correctly proved. Indeed, this is how the word [*nomen*] 'to change' is to be analyzed [*describere*], namely, that to change is to be in one way earlier and another later. For it is not enough to say, 'It is otherwise than it was', for this would not signify *to change* but *to have changed,* nor is it enough to say, 'It is otherwise than it will be', for this would not signify *to change* but *to be going to change.*

But I say that the sophism is false and impossible. And I respond to the arguments.

P.1 To the first, I would easily concede this: 'When Socrates is standing, he is not sitting', for 'when' is taken here indefinitely, and so this proposition is equivalent to 'At some time Socrates is standing at which he is not sitting', and this is true.[154] But the following is to be denied: 'Whenever Socrates is standing, he is not sitting', for this is equivalent to 'At every time at which Socrates is standing, he is not sitting', and this is false in a case in which an entire time C would be used as the present, and in the first half of it he would be standing and in the second he would be sitting, for C would be a time at which he would be sitting and standing. Therefore, this is not valid: '____ is standing; therefore, ____ is not sitting', or even this: '____ is white; therefore, ____ is not black', or 'A horse is dead; therefore, it is not alive', and so on. And the reason is that in an affirmative [proposition] the verb is taken indefinitely with respect to the consignified time; therefore, if during some part of the present time Socrates is standing, or is white, or is dead, it is true to say without qualification that he is standing, or is white, or is dead. But in a negative [proposition], the verb is distributed with respect to the consignified time; therefore, if during some part of that time someone is sitting or is black or is alive, the [propositions asserting that] he is not sitting, or is not black, or is not alive are false. Similarly, because of the divisibility of the future it is true that A will be sitting and will be standing, that A will be white and A will be black, that A will be alive and A will be dead.

P.2 To the other, it is conceded that the consequence from an affirmative with an infinite predicate to a negative with a finite predicate is not formally valid without qualification, for it is obvious that because of the divisibility of the past or the future it is not valid with propositions about the past or future; therefore, it is not valid with propositions about the present for the same reason. But Aristotle's intention is that the consequence is valid whether with

154. Indeed, in accordance with what has been said, 'At some time Socrates is sitting at which he is standing' would also be true, with respect to the same time, during a part of which Socrates is sitting and during a part of which he is standing.

propositions about the present or about the past or the future, with the assumption that the affirmative is true for all times consignified by the verb, and otherwise not.

Fifth sophism: This conjunction is true: 'Aristotle argues and Antichrist preaches'

P.1 Proof: it has been said that we can use as the present as long a time as we wish.

P.1.1 And this is clear: for, since we assume that there are no indivisible instants, it is obvious that we need to use some divisible time as the present time, and not the minimum sensible time, as some have said, for then a long spoken proposition would never be true, for it would never be in such a short time, although some little part of it would be. Nor is it necessary to use as the present only the time that coexists with the proposition we utter, for our propositions often are true for the duration of the things [we speak about], which is longer or shorter than the temporal duration of our expressions, although our expressions or propositions are about the present.

Also, in [connection with] the third sophism it was said that it is allowable for us to use as the present a time other than the precise time at which our proposition is propounded, and it seems quite obvious that all people speak in such a manner that they use a longer time as the present. For we say that one mass is very long and another very short, and that the days of summer are longer than the days of winter, and that Aristotle says that the motion of the heavens is perpetual. If therefore it is allowed to use such a long time as the present, then there is no reason why it should not be allowable to use as long a one as we wish. If therefore this is assumed, I posit the case that we wish to use a century or a thousand years as the present; and then, in accordance with what has been said, any part of it is also present. Therefore, those things will also be said to be present with which some part of that time coexists; but some time coexists with the argument of Aristotle and the preaching of Antichrist; therefore, even Aristotle is at present arguing and Antichrist is at present preaching.

O.1 The opposite is argued, for Aristotle is not, indeed, he has been dead for a long time; so how could he argue [now]? And Antichrist has not yet been born; so how could he preach, since he does not have a tongue to speak, nor a throat to utter a sound?

I respond that the sophism is to be conceded in the case in which we wish to use such a long time as the present—and we can reasonably do so, as has been correctly argued. But it is true that when we commonly speak about our everyday dealings, we usually do not use a long time as the present, but a short one, so as to better distinguish between our earlier and later deeds with respect to time. Therefore, because of our being accustomed in this way to refer to a short time as the present, at first it seems to us outrageous to say that Aristotle argues.

If we follow the argument, however, and we wish to use such a long time as the present, we have to concede the sophism and also have to say both that Aristotle is dead and that he is alive, and the same goes for the Antichrist, with respect to earlier and later. And it is false to say of Antichrist that he is not born and that he has no tongue, although it is indeed true that he is non-born, and someone not-having a tongue, as is clear from the previous sophism.

Sixth sophism: At every time Socrates is running

P.1 Proof: I use only this hour as the present, and I posit that during this entire [hour] Socrates is running. Then I argue: at every present time Socrates is running; therefore, at every time Socrates is running.

P.1.1 The antecedent is clear by the case.

P.1.2 The consequence is clear: for in the proposition in question no ampliative term is posited, whence, in this proposition there is no supposition or ampliation, except with respect to the present time. Therefore, these two are equivalent: 'At every time Socrates is running' and 'At every present time Socrates is running'.

P.2 Again, the sophism is clear by induction: for at no time that is can there be found a counterinstance, and the times that are not are not relevant to the question at issue—as when I say 'Every man is running', the [people] who were or will be are not relevant to [the truth of] this proposition, if they are not.

O.1 The opposite is argued: for 'At every time Socrates is running' is equivalent to 'Socrates is always running', for the word 'always' does not distribute for more time than 'at every time'; but it is not true to say that Socrates is always running, for then Socrates and his running would be sempiternal. Indeed, for someone who would use this day only as the present time everything that would exist during this whole day would be sempiternal, since something is called sempiternal because it always [*semper*] is.

I respond that the sophism is true and correctly proved, given the case assumed.

O.1 But concerning the argument on the opposite side it seems to me that we have to turn to the conventional signification of the name 'always' and of the name 'sempiternal'. For names signify by convention. If therefore we say that the utterances 'at every time' and 'always' are synonymous, then we have to concede that Socrates always runs. But it seems to me that according to common usage the word 'always' was imposed to distribute over every time, present, past, and future; and thus it would be an ampliative term, and 'Socrates is always running' would be equivalent to 'At every present, past, and future time Socrates is running, or will be running, or was running'. Or perhaps we may say that the word 'always' was imposed to distribute over every time that can be used as the present, if the verb is in the present tense, and over every time that can be used as the future, if the verb is in the future tense (and the same goes analogously for the past), or even over every present, past, future, and possible time, if this is what the verb requires, as when we say that something is always thought of or that God is always thinking and thought of; and thus I reduce the whole [problem] to that of the conventional signification of the term 'always' and the term 'sempiternal'.

Seventh sophism: The same written or spoken proposition is true and false for people of the same language and without a new imposition or obligation

P.1 Proof:[155] I posit that the proposition that Robert does not run is written or spoken. And I posit that Robert during the first hour of the day does not run and during every other hour of the day he runs. I also posit that Socrates uses only that first hour of this day as the present, and Plato uses the whole day as the present. Then, therefore, that proposition according to Socrates' usage is true, and according to Plato's usage it is false; therefore, it is both true and false, since both of these [uses] are acceptable, and neither of them violates a proper way of speaking.

O.1 The opposite is argued, for if a proposition is true, then its contradictory is false and conversely. Therefore, if some [proposition] is true and false,

155. An obligation in this context means a temporary stipulation of the use of some phrase.

then its contradictory has to be true and false and, consequently, both contradictories would be true and false together, which is impossible and against the law of contradictories.

I respond briefly that the sophism is true and correctly proved.

O.1 And to the argument I reply that contradictory propositions should differ with respect to affirmation and negation and with respect to the distribution and nondistribution of their common terms, if there are any. But in other respects they should not differ, not only in utterance, but also, indeed even more so, in intention. And then I say that the propositions in the case posited, namely, 'Robert runs' and 'Robert does not run', are contradictories for Socrates, and one of them is true and the other is false. They are also contradictories for Plato, and one is true and the other is false. But the affirmative for Socrates and the negative for Plato are not contradictories, for they differ in the intended time; therefore, it is not unacceptable that the spoken affirmative for one and the spoken negative of the other should be true together.

Eighth sophism: Whatever moves moved earlier

P.1 This is proved by the authority of Aristotle in bk. 6 of the *Physics*,[156] where he expressly shows this; indeed, he even shows that it is necessary that whatever changes has changed before, whatever becomes [something] has become [something] before, etc.

O.1 The opposite is argued on the basis of our earlier determination: for if we use this whole day as the present, we say that any part of this day is to be called present and no part is to be called past or future. But the verb 'moved' is about the past and so is 'has moved'; therefore, it can truly be said of something that it moved or has moved only if it moved in the past.

Let us therefore posit that A never existed before today—indeed, it is generated in the first hour—and that it will not exist after today, but it is destroyed in the vesper hour, and it moves in the hour of noon. Then it seems that A moves but never moved nor will move, for it never was or will be, for by the case it existed at no past time; but it never existed unless it existed in some past time. And we could argue in the same way however short a time we used as the present, provided that A moves precisely during that short time.

The solution seems to me to be that the names 'past' and 'present', which

156. Aristotle, *Physics* VI.6.236b32–34.

supposit for time, are sometimes taken simply and absolutely, sometimes relatively. If they are taken absolutely, then no part of the time that we use as the present should be called past or future. For in this way no past time is, but was, and no future is, but will be. And taking past and present in this way the sophism is false and is correctly disproved. In the other way 'past' and 'present' are taken relatively, so that an earlier part of the present time is past relative to a later part, and a later part is future relative to an earlier one. And this way of taking [these terms] is used for the reason that if we were to use only the earlier part as the present, then the later part would truly be called future, and conversely, if we were to use only the later part as the present, then the earlier part would be called past. And taking them in this relative way the sophism has to be conceded, for whatever moves, moves during some whole time, and during each part of it; and, in this way, insofar as it moves in the earlier part we say that it moved, and insofar as it moves in the later part we say that it will move; therefore, whatever moves also moved earlier and will move later, and this is what Aristotle intended. And according to this way of taking [these terms] these [propositions] are not to be denied: 'The past time is' and 'The future time is'; indeed, in this way it is correct to say what is usually said, namely, that the present time is composed of past and future, i.e., of earlier and later.

Ninth sophism: No change is instantaneous

P.1 Proof: every change is either in an indivisible instant or in some divisible time; but nothing is in an indivisible instant, for there are no indivisibles in time, as has often been assumed; therefore, every change is in divisible time, and everything that is such is to be called temporal and not instantaneous.

O.1 The opposite is argued, for at least the creation of our intellective soul is instantaneous. For since it is indivisible, it is necessary that the whole come to be simultaneously, not one part after another, and such a coming to be we call instantaneous change; therefore, etc.

We should note that it is not the logician's task to determine whether an instant is some thing, and if so what it is. Rather, we only assume that there is no indivisible thing in the continuum that is the terminus of the continuum, as many people imagined[157] concerning points in lines and instants in times.

157. This remark, as so many others, may be directed against Nicholas of Autrecourt.

Nevertheless, we say that that thing comes to be in an instant which is such that after nothing of it was, the whole of it is altogether at once so that no part of it is earlier in time than another part. And such a coming to be of a thing is called an instantaneous coming to be, or change. Therefore, since this is how our intellective soul comes to be, as also does every indivisible thing that comes to be, it is obvious that there is indeed instantaneous change; therefore, the sophism was false.

But then, for this reason we may ask when such a change occurs, and what [sort of] thing it is. To this I reply that as far as our present discussion is concerned such [an instantaneous] change is the thing itself that is thus said to come to be, and the thing's coming to be is only the becoming and the thing that comes to be, and being created is the creation and the thing created, and in general to be thus changed [*mutari*] is only the change [*mutatio*] and the thing changed [*mutatum*]. Therefore, being changed or change occurs [*est*] when the thing changed exists [*quando est mutatum*], and there never is a change save when the thing changed exists, but the thing changed certainly exists when there is no change, for the names '[thing] changed' and 'change' agree in that they both appellate two times, one at which the thing is or was, and another at which the thing is not or was not. But they appellate those times differently, for the change that is called 'coming to be' appellates both those times as present; therefore, such a coming to be is described as not being earlier and being later; however, 'what came to be' appellates the time at which it is not or was not as past, for something is called 'what came to be' because earlier it was not and later it is or will be. If, therefore, we use no time at which the thing earlier was not or is not as the present, but only some subsequent time, we do not say that the thing *comes* to be, but we say that it *came* to be. And if we use only the time preceding the existence of the thing as the present, then we neither say that it is *coming* to be nor that it *came* to be, but that it *is going to come* to be. And if we use some time composed of the time at which the thing first is not and the time at which it later is as the present, then we say that the thing *is coming* to be and also that it *came* to be; this we do on account of the later time relative to which we can call the earlier time past, although absolutely speaking both of them are called present.

Chapter 8: On self-referential propositions

The eighth chapter will be about propositions that are self-referential [*de propositionibus habentibus reflexionem supra seipsas*] on account of the signification of their terms. This chapter contains [propositions] called insolubles. And beginning with the easier ones I propound this sophism.

First sophism: Every proposition is affirmative; therefore, no proposition is negative

P.1 This is proved first by the locus from contraries. For just as 'Every man is ill; therefore, no man is healthy' is valid because it is impossible for the same [person] to be both ill and healthy, so is the above, because it is impossible for the same proposition to be both affirmative and negative.

P.2 Again, an enthymeme is valid if by the addition of a necessary proposition it can be completed into a formally valid syllogism—for it is by such additions that we usually prove our enthymemes. For example, we say that this is a valid consequence: 'A donkey flies; therefore, a donkey has wings', for this is necessary: 'Everything flying has wings',[158] and if we add this as the major, then we get a valid syllogism in the third mode of the first figure. So also in connection with the sophism, this is true: 'No affirmative is a negative', and if this is made the major in this enthymeme, then we shall get a valid syllogism, in the second mode of the first figure.

P.3 Again, the opposite of the consequent entails the opposite of the antecedent; therefore, the consequence is valid. For this rule is common to every valid consequence.

P.3.1 But the antecedent [suggested in P.3] is obvious: for 'Some proposition is negative; therefore, not every proposition is affirmative' is obviously valid.

O.1 The opposite is argued: for something possible does not entail something impossible, whereas the first [proposition of the sophism] is possible and the second is impossible. For the first is possible, namely, 'Every proposi-

158. Of course, this involves taking 'flying' in the sense in which it necessarily involves flapping with wings.

tion is affirmative', since God could annihilate all negatives while sparing the affirmatives, and then every proposition would be affirmative. But the other is impossible, namely, 'No proposition is negative', for in no case can it be true. For whenever it is not, then it is neither true nor false, and whenever it is, then some proposition is negative, namely, itself; therefore, it is false to say that no proposition is negative.

O.2 Again, a consequence is not valid if the antecedent can be true without the truth of the consequent. But this is the case here, for since the antecedent can be true and the consequent cannot be true, it is clear that the antecedent can be true without the truth of the consequent.

O.2.1 And this is also clear, because 'Every proposition is affirmative' would be true if God annihilated all negatives, and then the consequent would not be true, for it would not be. Therefore, it is clear that the antecedent can be true without the consequent; therefore, the consequence is not valid.

But it is replied that a consequence is not said to be valid because the antecedent cannot be true without the truth of the consequent, but because it cannot be true without the truth of the consequent when they are formed together—but this is the case here.

Contra: if a consequence were said to be valid for this reason, then it would follow that this consequence is valid: 'No proposition is affirmative; therefore, a stick stands in the corner', for it is impossible, if these are formed together, for the antecedent to be true; and if it cannot be true, then it follows that it cannot be true without the consequent.

O.3 Again, it is not a valid consequence in which the consequent, if it were added to the true antecedent, would falsify it,[159] for such a consequent appears to be incompatible rather than compatible with this antecedent. But this is the case here: for positing that 'Every proposition is affirmative' is true, if we add 'No proposition is negative', it will be false; therefore, the consequence is not valid.

I respond that the consequence is valid, as has been correctly proved.

But then there is the difficulty as to the basis on which a consequence is to be said to be true or false. And concerning this I briefly propound some conclusions.

159. Buridan here states the following theorem of propositional logic: $p \,\&\, (p \,\&\, q \rightarrow \sim p) \rightarrow \sim(p \rightarrow q)$.

First conclusion

The first conclusion is that some consequence is valid whose antecedent can be true without the truth of the consequent and without the consequent. For this is a valid consequence: 'A man runs; therefore, an animal runs', and yet the first [proposition, i.e., the antecedent of this consequence] would be true, even if the second [proposition, i.e., the consequent of the same consequence] did not exist but were annihilated.

Second conclusion

The second conclusion is that the antecedent of a valid consequence can be true while its consequent cannot be true. And this is clear in the present case: for 'Every proposition is affirmative' can be true and 'No proposition is negative' cannot be true, and yet the second follows from the first. And the same would hold in many other cases, for example, 'Every syllable is several letters; therefore, no syllable is a single letter'.[160]

Third conclusion

The third conclusion is that some proposition is possible that cannot be true.

Proof: a possible antecedent never entails an impossible consequent, as I assume from bk. 1 of the *Prior Analytics*.[161] But 'Every proposition is affirmative', which is possible, entails 'No proposition is negative'; therefore, it is possible, and yet it cannot be true. And thus it is clear that a proposition is not said to be possible because it can be true, nor impossible because it cannot be true,

160. For if the consequent ('No syllable is a single letter') is true, then it has to exist, and if it exists, then a single-letter syllable exists (e.g., 'a', which occurs in this consequent in English, or 'u', which occurs in the word *u-ni-ca,* in the corresponding Latin, *nulla syllaba est unica littera*). But then, if a single-letter syllable exists, then the consequent is false, whence, if it is true, then it is false, and thus it cannot be true.

161. Aristotle, *Prior Analytics* I, chaps. 13 and 14, or even chap. 15, 34a22–24.

but it is said to be possible because things can be as it signifies, taking these words in the proper sense according to the determination in chapter 2, and impossible because things cannot be so, etc.

Fourth conclusion

The fourth conclusion is that it is impossible for a valid consequence's antecedent to be true while the consequent is false. For this is how we are supposed to understand that something true does not entail something false, as is stated in bk. 1 of *Prior Analytics*.[162] And in this way it is indeed true that in a valid consequence it is impossible for the antecedent to be true without the truth of the consequent if they are formed together. This notwithstanding, however, it has to be conceded that something true can entail something false. For let us posit that the following proposition is true: 'Every proposition is affirmative'; then it can entail a false one, namely, 'No proposition is negative'. But when this is concluded, the former is no longer true, but false.

Fifth conclusion

The fifth conclusion is that for the validity of a consequence it does not suffice for it to be impossible for the antecedent to be true without the consequent if they are formed together, as has been correctly argued above about the stick in the corner.

And this is also obvious from another example, for this is not valid: 'No proposition is negative; therefore, no proposition is affirmative'. And this is clear because the opposite of the consequent does not entail the opposite of the antecedent. Yet, the first cannot be true without the truth of the second, for it cannot be true.

Therefore, something more is required, namely, that things cannot be as the antecedent signifies without being as the consequent signifies. But in connection with this it has been determined that this is not the proper expression of the point, but we use it in the sense given there, for we cannot generally ex-

162. Ibid., II.2.53b7–8.

press in a single expression covering all true propositions a reason why they are true, nor concerning all false propositions a reason why they are false, as has been said elsewhere.[163]

And by these remarks we solve the arguments disproving the sophism.

O.1 To the first it is replied that [the proposition] 'No proposition is negative' is possible, although it cannot be true.

O.2 From what has been said it is clear how we should reply to the second.

O.3 To the third we should reply that those propositions are indeed incompatible as to their being true, but they are not incompatible as to whether things are as they signify, still speaking in the intended sense. Rather, in this way they are compatible: for it is necessary that if things are as the first signifies, then things are as the second signifies.

Second sophism: No proposition is negative; therefore, some proposition is negative

P.1 Proof:[164] assume that any proposition entails that it is true—this is what Aristotle appears to maintain in the *Categories* in the chapter on priority.[165]

For it follows that if a man is, then 'A man is' is true, and conversely, as he says, and, by the same token, the same would go for other cases. Then we argue thus: the following is valid: "No proposition is negative; therefore, 'No proposition is negative' is true," and it also follows that if it is true, then it is; and if it is, then it follows that some proposition is negative; therefore, from the first to the last it follows that if no proposition is negative, then some proposition is negative.

P.2 Again, it is not possible for things to be as the first [proposition, i.e., the antecedent] signifies without their being as the second [the consequent] signifies; therefore, the consequence is valid.

P.2.1 The consequence seems to be manifest from what we said a valid con-

163. Chapter 2, conclusion 14 above.

164. For some curious reason, here I had *affirmativa* (affirmative) in the working edition of the critical text. But from the subsequent arguments it is clear that we should have *negativa* (negative) here; indeed, this is what we can find in T. K. Scott's Latin text and in his translation, as well as in J. Biard's French translation and in G. E. Hughes, ed., *John Buridan on Self-Reference: Chapter Eight of Buridan's* Sophismata (Cambridge: Cambridge University Press, 1982), p. 44.

165. Aristotle, *Categories* 12.14b14–18.

sequence was in the previous sophism, and you cannot otherwise express the reason why a consequence is said to be valid.

P.2.2 But I prove the antecedent: for it follows that if things are as it signifies, then it signifies; and it follows that if it signifies, then it is; and, if it is, then things are as signified by the second.

O.1 The opposite is argued on the basis of what has been said in the previous sophism: for it could be that things are as signified by the first, and yet they would not be as signified by the second. For this would be the case if all negative propositions were destroyed; therefore, this is not a valid consequence.

O.2 Again, a possible proposition does not entail its contradictory, but the first is possible and the second is its contradictory; therefore, etc.

I briefly reply that the sophism was false. For the consequence it embodies is not valid, as has been correctly proved.

P.1 And I respond to the first argument by saying that that rule, thus stated, is not true properly speaking [*de virtute sermonis*], namely, [the rule] that any proposition entails that it is true; indeed, this is not valid: "A man is; therefore, 'A man is' is true," for a man could exist even if no proposition existed, and also because it is possible that things could be as the proposition 'A man is' signifies or would signify if it were propounded, whereas they would not be as "'A man is' is true" would signify. For this would be the case if there were a man, but no proposition existed.

But you will ask: 'How should that rule of Aristotle's be understood?' I reply that it should be understood as involving the existence of the proposition, so that every conjunction consisting of some proposition and another stating that it exists entails that it is true. For example, this is valid: "A man is and 'A man is' is; therefore, it [namely, 'A man is'] is true," for things cannot be as the conjunction signifies without their being as the conclusion signifies, always in agreement with the intended sense.[166]

P.2 To the second, which seems to be troublesome, I reply that a consequence is never true or false unless it is; and thus the validity or truth of a consequence requires that its antecedent and consequent exist. And then, with this assumption, we give the rule that a consequence is valid if it is impossible for things to be as the antecedent signifies without their being as the consequent signifies.

And this rule can be understood in two ways: first, that it is one proposition about impossibility in the composite sense, in the way that this is commonly used, and its sense then is that this is impossible: 'When it is formed, things are as the antecedent signifies and not as the consequent signifies'. And taken

166. Chapter 2, conclusion 14 above.

in this way the rule is not valid, for according to this rule it follows that the sophism is true. And it is according to this false rule that the argument proceeded.

Taken in the other way, the rule is understood as a proposition about impossibility in the divided sense, so that its sense is: a consequence is valid if in whatever way the antecedent signifies [things to be], it is impossible for things to be in that way without their being in the way the consequent signifies [them to be]. And it is clear that this rule would not prove the sophism true, for in whatever way the proposition 'No proposition is negative' signifies, it is possible for things to be in that way, and yet for them not to be in the way in which the other signifies; for this would be the case if, while the affirmatives stayed in existence, all negatives were annihilated, and this is possible.

Third sophism: Every man runs; therefore, a donkey runs

The third sophism is preparatory for what follows,[167] and runs thus: positing that every man is a donkey, this is valid: 'Every man runs; therefore, a donkey runs'.

P.1 This is proved by a syllogism in the first mode of the third figure thus: every man runs; and every man is a donkey, as has been posited; therefore, a donkey runs. So, let this be a syllogism *ad impossibile,* taking the position of the adversary together with some true proposition, and thus we infer the conclusion by means of a valid consequence, even though the conclusion should be impossible.[168] Therefore, in this case too we have a valid consequence.

P.2 Again, things cannot be as was posited and as the antecedent signifies

167. *Tertium sophisma disponit ad sequentia.* In J. Biard's translation: "Le troisième sophisme concerne les enchaînements qui suivent d'une hypothèse" (The third sophism concerns the consequences that follow from a hypothesis), which is a possible interpretation, but I think it reads too much into this simple phrase. The same applies to Hughes's translation: "The third sophism is concerned with what follows from a posited proposition."

168. As Joël Biard remarks, it is unclear why the conclusion that a donkey runs should be regarded as impossible, and hence why the argument should be regarded as an argument *ad impossibile.* But perhaps Buridan's point is that even if the conclusion were impossible on account of the impossibility of a premise (or the incompossibility of several premises), the consequence would still be valid, and this is what he intends to prove.

without their being as the consequent signifies; therefore, from that antecedent, along with what was posited, there follows that consequent.

O.1 The opposite is argued: the rule is posited in logic that every false consequence is impossible and that every true one is necessary. But an impossible proposition cannot become necessary by positing some case; therefore, whatever case is posited or removed, or conceded or not conceded, a false consequence cannot become true. But it is clear that this consequence is false, for this is not necessary: 'Every man runs; therefore, a donkey runs'. Therefore, whatever case is posited, 'Every man runs; therefore, a donkey runs' will never be valid on the basis of that [case].

The solution of this sophism is easy: for you can say, assert, or propound at will any proposition you please, and yet a necessary consequence will never become not necessary (or conversely), as a result of such an action of yours; therefore, the sophism posited in this way is false. Because of the arguments, however, we should know that in one way a proposition can be posited or conceded or stated absolutely, as a proposition taken in itself, and then the truth or falsity of other propositions or consequences is irrelevant to it. In another way we posit a proposition as the antecedent or part of an antecedent so as to infer another, and then it is indeed necessary to see whether the proposed conclusion follows from it with the addition of others. For example, if in this case you posit absolutely that every man is a donkey, then because of this the consequence posited in the sophism will become neither more nor less valid. But if you posit that every man is a donkey as an antecedent to infer some conclusion, I would immediately say that it does indeed follow that 'therefore, some man is a donkey'. And if you posited this proposition as a part of an antecedent with 'Every man runs' as the other part, then I say that it does indeed follow that 'therefore, a donkey runs'. And this is how the arguments proceeded.

Fourth sophism: I say that a man is a donkey

And concerning this sophism it is asked whether he who says this utters something true or false.

And it is argued that he says something false: for he says that a man is a donkey; and this is false; therefore, etc.

But it is argued that he says something true: for his whole proposition was this: 'I say that a man is a donkey'; and that was true, for he indeed uttered this whole proposition.

Again, his proposition was affirmative, and its subject and predicate supposited for the same thing; therefore, the proposition that he uttered was true.

That the subject and the predicate supposit for the same thing is clear, for if we made the copula explicit, then the proposition will be this: 'I am someone saying that a man is a donkey', and then it is manifest that the term 'I' and 'someone saying that a man is a donkey' supposited for the same thing.

Many people respond to this sophism [by claiming] that he utters something true and also something false, for he utters this whole proposition: 'I say that a man is a donkey'; and this is true; therefore, he utters something true. But in addition, by uttering that proposition he utters any part of it; therefore he says that a man is a donkey, and in so doing he says something false.

But I find this solution very doubtful, for this solution assumes that some part of a proposition is a proposition, which I am unwilling to accept.

For David, the psalmist, speaking as a prophet inspired by the Holy Spirit, said nothing false, and yet he said this proposition: 'The fool hath said in his heart, there is no God';[169] therefore, the psalmist said this utterance: 'There is no God', so, if it had been a proposition, then he would have said something false and heretical, therefore, it was not a proposition when uttered in this way, but a part of a proposition. But the fool erred who said this utterance on its own, and as one proposition. And this is similar to the fact that one half of a worm is not an animal, as long as it is a part of an animal, but when separated from the other part it is an animal.

But I sufficiently discussed this point in chapter seven of the first treatise of the *Summulae*.[170]

It seems to me, therefore, that he who says 'I say that a man is a donkey' says something true, properly speaking. We should also say that he does not say something false. And when it is objected that he says that a man is a donkey, I say that he does indeed utter such an utterance, but not on its own, as a proposition; therefore, that utterance was neither true nor false.

But you will have a powerful retort, since from what has been declared it follows that he who would say: "This proposition: 'A man is an animal' is true" would lie.

Proof: his whole proposition is affirmative and its subject supposits for nothing, for the utterance 'A man is an animal' was not a proposition but a part of a proposition, and thus the whole subject "This proposition: 'A man is an animal'" supposits for nothing, just as if, pointing to a stone, I were to say: 'This man is a substance', then the subject would supposit for nothing and the proposition would be false.

169. Psalms 13:1 (KJV 14:1).

170. See 1.7.1.

I briefly reply that we have to know what you indicate by the pronoun 'this', for if you indicate the utterance 'A man is a animal', which you utter in that proposition of yours, I say that that proposition of yours is false, as the argument has correctly proved. But if you indicate a similar utterance uttered separately, then your proposition is true and the subject supposits for something, namely, for the utterance that in itself is a true proposition. So such propositions are to be understood and conceded in this sense and not in the other, unless, perhaps, one takes them conditionally, thus: "'A man is an animal' is true," i.e., "if the utterance 'A man is an animal' were posited separately, then it would be a true proposition." And it is clear that this whole [conditional statement] amounts to the same [point that was made above].

Fifth sophism: Whatever Socrates hears, that Plato utters

We posit the case that Plato utters the proposition 'No man is a donkey' and Socrates does not hear the first word, but hears the rest, namely, 'Man is a donkey' and hears nothing else.

P.1 Then the sophism is proved, for Socrates hears this utterance, namely, 'Man is a donkey' and nothing more; and that utterance Plato utters, although [he does so] along with another utterance; therefore, whatever Socrates hears, that Plato utters.

O.1 The opposite is argued: Plato does not utter something false but rather something true. But Socrates hears something false, namely, that man is a donkey; therefore, he hears something that Plato does not utter.

O.2 Again, by a syllogism *ad impossibile,* this is argued thus: 'Whatever Socrates hears Plato utters; Socrates hears something false; therefore, Plato utters something false'. But this conclusion is false, for Plato utters an absolutely true proposition, namely, that no man is a donkey, and he cannot be reprehended for any falsity.

I reply that the sophism is true.

O.1–O.2 To the argument on the opposite side I say that Socrates does not hear something true, nor does he hear something false, but he only hears a part of a true proposition. Therefore, I believe that Plato said nothing false, but [something] true, which implies no falsity; although he did indeed say something that was not true but was a part of something true.

You will retort that that utterance is false which elicits a false mental propo-

sition in the soul of the hearer; but the utterance that Socrates hears elicits in Socrates a false mental proposition, whence Socrates in this case believes that Plato said something false; therefore, that utterance was false.

I respond that someone who speaks correctly and truly does not speak incorrectly and falsely because of those who mishear or take his proposition mistakenly. Whence it certainly often happens that someone utters one proposition, which someone mishears and believes he said another. And then that proposition does not elicit in the hearer the mental proposition that it signifies but the mental proposition that would be signified by the proposition the hearer *believed* he heard. And in such a case a proposition thus uttered is not false, but only that which the hearer *believed* he heard is false. But every proposition would be false for a hearer that, on being perfectly heard by him who also knew its signification completely, would elicit in this hearer, on the basis of that signification, a false mental proposition. But in our case Socrates does not hear a proposition but *believes* he hears one. Therefore, the utterance Socrates hears does not elicit in him the sense it signifies, for that is not the sense of the proposition, but rather it elicits in him a sense that would be elicited by a proposition like the one he believes he hears. And what follows from this is only that a proposition like the one he believed he heard would be false.

Sixth sophism: It is true to declare a man to be an animal

It is asked therefore about this sophism whether someone who utters the proposition 'It is true to declare a man to be an animal' says something true, assuming that he says so. And I note that in our sophisms I intend to speak about the true or the false exclusively insofar as they are the appropriate properties of propositions. For I do not intend to investigate how God is true and how He is the First Truth, or how a man is false [a liar] or how a dollar [*denarius*] is false [a counterfeit]. But I wish to speak about the true and the false insofar as they contradict each other, as is asserted in bk. 6 of the *Metaphysics*,[171] for the logician does not intend to speak about truth and falsity in any other sense.

171. Aristotle, *Metaphysics* VI.4.1027b17–25. Hughes provides the reading: *volo loqui de vero et falso prout partiuntur sibi contradictionem* (I do want to speak about what is true and what

P.1 Then I argue that one does not say something true here: for the predicate 'to declare a man to be an animal' is taken either significatively or materially.[172] If significatively, then to declare a man to be an animal is the same as the one who declares a man to be an animal, as I assume from the *Physics*.[173] But the one who declares a man to be an animal is a man, who is neither true nor false, for he is neither a proposition nor a part of a contradiction. And if it is taken materially, it still does not seem to supposit for a proposition, for if it supposited for itself or for another utterance similar to it in its formation, then it is clear that the utterance 'to declare a man to be an animal' or one similar to it is not a proposition, nor is it a complete expression; whence it is neither true nor false. And if it is said that it supposits neither for itself nor for another similar utterance, but for another expression formed in the indicative mood, as the expression 'a man to run' usually supposits for the proposition 'A man runs', then it is obvious that it does not supposit for a proposition but for a part of a proposition. For although 'a man to be good' supposits for the proposition 'A man is good', nevertheless, 'to be good' does not supposit for this proposition but for the expression 'is good', which is not a proposition. And this is the case here: for although the expression 'someone to declare a man to be an animal'[174] would supposit for the expression 'someone declares a man to be an animal', nevertheless, the expression 'to declare a man to be an animal' would supposit only for 'declares a man to be an animal', which is not a proposition; therefore, it is neither true nor false. Therefore, the sophism, namely, 'It is true to declare a man to be an animal', was false.

O.1 The opposite is argued: it is true to declare that a man is an animal, but the expression 'a man to be an animal' and the expression 'that a man is an animal', taken materially, are equivalent, and one can be taken in place of the other; therefore, it is true to declare a man to be an animal.

O.2 Again, it is true to affirm a true proposition, just as it is false to deny a false proposition; but to declare a man to be an animal is to affirm a true

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is false in so far as they divide up a contradiction between them). Hughes, *John Buridan on Self-Reference,* pp. 58–59. See n. 53 above.

172. In the Latin we have *hominem esse animal,* an accusative-with-infinitive construction, which in other contexts I had to translate by that-clauses. Since this context demands the more faithful infinitive construction in English, I have to use it here. We must not forget, however, that Buridan's semantical doctrine concerning such sentential nominalizations is the same regardless of which particular syntactical construction we happen to use. Indeed, Buridan will state below that he takes *hominem esse animal* (a man to be an animal) and *quod homo est animal* (that a man is an animal) to be equivalent.

173. Buridan, *Quaestiones super octo Physicorum libros Aristotelis,* bk. 1, q. 18.

174. This would be as in 'I urged someone to declare a man to be an animal'.

proposition, namely, that a man is an animal; therefore, to declare a man to be an animal is true; and then by converting this proposition we get the sophism.[175]

I respond that the sophism, strictly speaking [*de proprietate sermonis*], is false.

Sometimes, however, such propositions are taken as improper locutions in place of other propositions that would be proper. For example, this is true: 'He who declares a man to be an animal says something true', i.e., he who separately says the utterance 'A man is an animal'. Similarly, this is true: 'To declare a man to be an animal is to say something true'. Likewise, this is true: 'It is true that a man is an animal'. But the sophism is false, strictly speaking, as has been correctly proved.

I respond to the arguments.

O.1 To the first I reply that this is false: 'It is true to declare that a man is an animal' [*verum est dicere quod homo est animal*], but this is true: 'It is true that a man is an animal' [*verum est quod homo est animal*], or even 'That a man is an animal is true' [*verum est hominem esse animal*].[176] But that a man is an animal [*hominem esse animal*] and to declare that a man is an animal [*dicere hominem esse animal*] are quite different.[177]

O.2 To the second I deny that to affirm or to deny a proposition is something true or false, for to affirm or to deny is nothing else but the one affirming or denying, and this is a man, who is neither true nor false. And if 'to affirm a proposition' supposits materially, then saying 'to affirm a proposition' is

175. That is, by converting 'To declare a man to be animal is true' into 'It is true to declare a man to be animal'.

176. Unfortunately, it is not possible here to use the corresponding infinitive construction in English, so the best I can do is change word order to indicate some difference.

177. Obviously, we need to spell this out somewhat more clearly. The point of the objection was that since the infinitive and the that-clause constructions are equivalent in material supposition, we can move from 'It is true to declare that a man is an animal' to 'It is true to declare a man to be an animal'. But Buridan's response to the sophism states that, strictly speaking, the first proposition is already false. The reason for this is that 'It is true to declare that a man is an animal', or, equivalently, 'To declare that a man is an animal is true' could be true only if its terms supposited for the same thing. But the infinitive 'to declare that a man is an animal' supposits either for a person who declares that a man is an animal, if it is taken significatively, or for the incomplete expression 'declares that a man is an animal', if it is taken materially. Since the term 'true' can supposit only for propositions but not for persons or for incomplete expressions, however, the original sentence cannot be true in the strict sense. Yet, of course it can be used loosely to express the true claim that someone who declares that a man is an animal declares something true, or the claim that it is true that a man is an animal.

equivalent to saying '. . . affirms a proposition' and this is not a proposition, but an incomplete expression, just as '. . . reads Vergil' is.

Seventh sophism: Every proposition is false

The seventh sophism is the following so-called insoluble: 'Every proposition is false'.

We posit the case that all true propositions are annihilated while the false ones remain [in existence], and then Socrates propounds only this [proposition]: 'Every proposition is false'.

It is then asked whether his proposition is true or false.

O.1 It is argued that it is not true: for I assume that it is impossible for the same proposition to be true and false when propounded in the same language and understood in the same way by everyone hearing it. Then, therefore, if it is true, it follows that not every proposition is false, for then some proposition is true. But this contradicts it; therefore, it is false, and indeed, impossible, since every proposition is impossible that entails its contradictory.

P.1 Next, we go on to prove that it is not false but true: for it is a universal proposition that has no counterinstance, for neither itself nor any other [is its counterinstance] according to the case; therefore, it is true.

P.2 Again, if it were false, then its predicate and subject would universally supposit for the same [things]; therefore, since it is affirmative, it follows that it is true.

P.3 Again, if it is false, then howsoever it signifies, so things are, for it signifies only that every proposition is false; and this is how things are; therefore, it is itself true.

In connection with this sophism there are two very difficult questions. The first is whether in the posited case this proposition is true or false. The second is how its contradictory or its equivalent can be assigned.

And first I say that, maintaining and conceding the case posited, there can then be posited along with this the other case that this proposition is true. And this is clear on the basis of what was said in connection with the second and the third sophisms of the seventh chapter, where it was said that we can speak at a certain time referring to some other time [*in aliquo tempore pro alio tempore*], as when we truly say at a certain time that Socrates sits, even though at that time he does not sit, for by the time connoted by the verb 'sits' we understand not the time that coexists with our proposition but some other time. If,

therefore, we concede the case that during the first hour of this day there is no true proposition, but that every proposition is false, and after the end of this hour Socrates says that every proposition is false, and that he refers not to the time at which he speaks but to the time of that first hour, then in this way his proposition would be true, for an induction over the propositions of that first hour would be exhaustive.

But this solution, although it would be true in the given case, does not remove the difficulty with the sophism in the other case, namely, that in which Socrates refers to the very same time at which he speaks.

And others, trying to evade [the difficulty], say that the terms that are apt to supposit for propositions are not put in propositions to supposit for the propositions in which they occur, but for others. Therefore, they say that the term 'proposition' in Socrates' proposition did not supposit for that proposition but for all the others, and those all were false.

But it is obvious that this solution will not do: for what one understands, of that he can speak. But by means of the concept to which the name 'proposition' is subordinated one understands indifferently all propositions, indeed, present, past, and future ones, his own as well as those of another person; therefore, he can speak of all. And it is clear that I can say that the proposition that I am actually uttering is affirmative, and it can be my intention to speak about it. Therefore, the term 'proposition', which was put in the proposition [in question], supposited for [this proposition].

Again, this evasion by no means avoids the difficulty, for I posit that Socrates utters this proposition and at the same time Plato utters a similar one; and then for whatever reason the one would say something true, for the same reason the other would say something true as well, and the same goes for falsity. Therefore, either both say something true or both would say something false.

And then I go on to ask whether Socrates says something true. If you were to say yes, then, since he speaks about Plato's proposition, although not about his own, it follows that Plato's proposition is false, and consequently, by the same token, Socrates' proposition is false as well. And if someone were to say that both are false, then it follows that both are true, for things are as they assert them to be—since they assert that every proposition is false and such is the case—and also because if they are false, then their subjects and predicates supposit for the same; but then they are true, since they are affirmative and since they are universals such that they have no counterinstance among the singulars.

Others have said that such a proposition is true and false at the same time.

But from this something unacceptable immediately arises, for then, if its contradictory were true, both contradictories would be true, and if it were

false, then both contradictories would be false, and both of these are impossible.

And then there is also the question of how its contradictory can be given. For I posit the case that there are now only two propositions, namely, that a man is a donkey and the aforementioned proposition of Socrates.

Then I show that its contradictory cannot be given: for both contradictories should supposit for the same thing or things, and the one [must] not [supposit] for more than the other.[178] Now Socrates' proposition supposits only for two propositions, according to the posited case, namely, for itself and for 'A man is a donkey'. But if you want to give its contradictory, namely, 'Some proposition is not false', it would immediately supposit for three, namely, for itself and for the other two; therefore, it would not contradict Socrates' proposition.

But this problem will be resolved by the remarks concerning the second and third sophisms of the seventh chapter. For that third proposition, which contradicts Socrates' proposition, is not formed with reference to the time at which it is formed, but rather with reference to the time at which Socrates' proposition was formed. Therefore, that third proposition would supposit only for those for which Socrates' proposition supposited, whence it would not supposit for itself, because it did not exist at that time.

We should look therefore into the truth and falsity of this [Socrates'] proposition. And I briefly reply that it is false, for it is either false or not false. If it is false, then I have what wanted to prove; and if it is not false, then it follows that it is true, for it exists, and, if it is true, then it follows that it is false, as was argued above; therefore, I again have what I wanted to prove, namely, that it is false. But then it is difficult to respond to the arguments.

For some people have said, and so it seemed to me elsewhere,[179] that although this proposition does not signify or assert anything according to the signification of its terms other than that every proposition is false, nevertheless, every proposition by its form signifies or asserts itself to be true. Therefore, every proposition asserting itself to be false, either directly or implicitly, is false, for although things are as it signifies, insofar as it signifies itself to be false, nevertheless, things are not as it signifies insofar as it signifies itself to be true. Therefore, it is false and not true, since for its truth it is required

178. Note that throughout this passage, obviously for the sake of brevity, Buridan is using improper locutions, talking about the supposition of propositions, rather than that of their terms. His intended meaning is clear, however, so I also leave his formulations in their original, improper form.

179. J. Buridan, *Quaestiones in primum librum Analyticorum Posteriorum,* q. 10 (unpublished edition by H. Hubien).

not only that things be as it signifies but also that they be in whatever way it signifies [them to be].[180]

But this response does not seem to me to be valid, in the strict sense. Now I am not objecting to this manner of speaking: 'In whatever way it signifies [things to be] so things are', for enough has been said about this earlier.[181]

But rather, I [am going to] show that it is not true that every proposition signifies or asserts itself to be true. For you take the expression 'itself to be true' either materially or significatively. If materially, then the proposition 'A man is an animal' does not signify or assert itself to be true, for then the sense [of your claim] would be that it would signify the proposition "The proposition 'A man is an animal' is true," and this is false, for this second proposition is already of second intentions, and the first, since it was purely of first intentions, did not signify second intentions.[182] But if you say that 'itself to be true' is taken significatively, then the proposition 'A man is a donkey' does not signify itself to be true, for just as *that a man is a donkey* is nothing, because a man cannot be a donkey, so also *that the proposition 'A man is a donkey' is true* is noth-

180. The solution, then, is that the truth of a proposition not only requires that the case be as the proposition directly signifies, but also that the case be that it is true, which it indirectly signifies. So, according to this theory, 'p' is true if and only if it is the case that 'p', and p is true (and p exists, as we shall see later), where any well-formed proposition can substitute for the letter 'p'. Note that this is not a Tarskian biconditional, providing a (partial) "semantical definition of truth," since obviously such a definition would be circular. This biconditional only supplies the conditions for the assertion that a proposition is true, and one of these, besides the obvious requirements that the truth-conditions of the proposition be satisfied and that the proposition exist, is the further, apparently trivial, requirement that the proposition be true. But it is precisely this trivial requirement that an "insoluble" proposition, despite appearances to the contrary, cannot satisfy. Indeed, substituting the sophism for p we can see that this requirement cannot be satisfied, since the truth of the sophism implies its falsity, whence it is necessarily false. Buridan's subsequent discussion serves only to give a precise formulation of this idea.

181. This was discussed in chap. 2, conclusion 14. See also nn. 4 and 50 above.

182. Second intentions are concepts by means of which we conceive of concepts (or other signs) insofar as they are concepts (or signs). For example, the concept to which the term 'species' is subordinated is a second intention. First intentions are concepts by means of which we conceive of things other than concepts (or other signs), or perhaps concepts, but not insofar as they are concepts (or signs). Such is, e.g., the concept to which the term 'man' is subordinated, by which we conceive of human beings, who are not concepts. or the concept to which the term 'being' is subordinated, by which we conceive of both things that are not concepts and things that are concepts; however, by this concept we conceive of the latter not insofar as they are concepts but insofar as they are entities, regardless of their representative function. See Albertus de Saxonia, *Perutilis Logica* (Venice, 1518; reprint, Hildesheim: Georg Olms Verlag, 1974), f. 4, va.

ing, nor can it be anything, for it [namely, the proposition 'A man is a donkey'] cannot be true.[183] But it is not true to say of that which is nothing, nor can be anything, that it is signified or understood or asserted, as was sufficiently discussed elsewhere.[184] For if you say that *that the proposition 'A man is a donkey' is true* is signified or asserted or understood, then you say something false, for this proposition is affirmative and its subject supposits for nothing.[185] And the case is similar here, for the proposition 'Every proposition is false' cannot be true; therefore, *that it is true* is not, nor can it possibly be; hence, it is neither signified nor understood, and so it does not signify itself to be true.

Therefore, we put this otherwise, in a manner closer to the truth, namely, that every proposition virtually implies [*implicat virtualiter*] another proposition in which the predicate 'true' is affirmed of the subject that supposits for [the original proposition]; and I say 'virtually implies' in the sense in which the antecedent implies that which follows from it. Therefore, a proposition is not true if in such an affirmative consequent the subject and the predicate do not supposit for the same [thing or things].

For example, let us posit that Socrates' proposition 'No proposition is true' is named by the proper name 'C'; then this is valid: 'No proposition is true; therefore, C is true'; therefore, things are not as the consequent virtually implied by the original proposition signifies, whence that original proposition is not true. For it is not sufficient for the truth of the proposition that things be as it signifies by its formal signification, but it is also required that things be as its virtually implied consequent signifies. And this is why it is said that when a proposition has or can have reference to itself [*habet vel habere potest reflexionem super se*], it does not suffice for the truth of an affirmative [proposition] that its terms supposit for the same [thing or things], as I have said elsewhere,[186] but it is also required that that even in this consequent the terms supposit for the same [thing or things], and then it is necessary, if this holds, that the proposition be true.

And then by this we easily solve the arguments.

183. This is because the sentential nominalization "that the proposition 'A man is a donkey' is true" should refer to things of which the terms of the corresponding proposition, namely, "The proposition 'A man is a donkey' is true" are jointly true. But the subject of this proposition refers to any proposition of the form 'A man is a donkey', which is necessarily false; therefore, the predicate 'true' cannot be true of any of these, whence the two terms cannot be jointly true of anything, and so the corresponding nominalization can refer to nothing.

184. *Sophismata,* chap. 1, Fourth sophism, conclusion 5.

185. Namely, "that the proposition 'A man is a donkey' is true," which is the subject of the proposition "That the proposition 'A man is a donkey' is true is signified."

186. *Sophismata,* chap. 2, Ninth sophism, conclusion 12.

P.1 To the first it will be replied that it is indeed universal, but it does have a counterinstance, namely, itself, not against its formal signification, but rather against what it implies as a consequent.

P.2 To the other it is replied that the subject and the predicate of this consequent do not supposit for the same [thing or things], which, however, is required for the truth of an affirmative proposition, whichever that proposition may be.

P.3 [In reply] to the last one it has been likewise stated that things are not as the implied consequent signifies, even if this locution is understood in the required sense.

But although this solution is in my opinion closer to the truth, it is still not perfect, for it assumes something false, namely, that any proposition implies such a consequent. For assuming that the proposition 'A horse runs' is named by the proper name 'B', then this is not valid: 'A horse runs; therefore, B is true', as has been said in connection with the second sophism of this chapter. Therefore, perfecting this solution, we have to say that every proposition, adding *that it exists,* implies that it is true, so that in the previous case, namely, in which the proposition 'A horse runs' is named by the proper name 'B', this is valid: 'A horse runs, and B exists; therefore, B is true'. But in our present case concerning the sophism it is obvious that this addition is supplied by that case, for it was posited that Socrates uttered the proposition 'No proposition is true'. Therefore, it is posited that it exists, and thus, from this proposition and the case, or from the proposition expressing the case, it follows that it is true, which is false; therefore, it is false, or the case is false. Therefore, if the case is accepted as true, it has to be said that this proposition is false.

But then we have to solve the arguments, because the first argument, even with that addition, was not sufficiently solved. For when it is said that it [the sophism] is a universal that does not have a counterinstance, I say that although it does not have a counterinstance as to its formal signification taken exclusively in itself [*praecise*], yet there would be a counterinstance against that which it implies as a consequent along with the case, and this suffices for its falsification, if the assumption of the case is true. And the other arguments are also solved in the same fashion.

But then it is further queried whether this proposition, namely, 'Every proposition is false', is possible. And I say that it is possible, although it cannot be true, for things would be as it signifies if God annihilated all propositions except for these two: 'A man is a donkey' and 'A horse is a goat', for then every proposition would be false. But I would add that the conjunction consisting of it [the sophism] and the case [i.e., the proposition describing the case] is

impossible, for it implies something impossible, namely, that it [the sophism] is both true and false.

Eighth sophism: Plato says something false

The eighth sophism is, 'Plato says something false', and it seems to me to be more difficult.

Let it be the case that Socrates utters this proposition: 'Plato says something false', and none other, and, conversely, Plato utters this: 'Socrates says something false', and none other. It is then asked whether Socrates' proposition, which is the sophism, is true or false.

P.1 And it is argued that it is true: for there is no reason why Socrates' proposition should be true or false rather than Plato's, or conversely, for they are related to each other in exactly the same way. Therefore, if one is true, then so is the other, and if one is false, then so is the other. This [much] I am assuming.

P.2 If therefore you say that Socrates' proposition is not true but false, then also Plato says something false, by the same token; and this is what Socrates affirms, and nothing else; therefore, he affirms [things to be] as they are [*affirmat sicut est,* i.e., he affirms Plato's proposition to be false, and so it is]; therefore, his proposition is true. Also, his proposition is affirmative, and its terms, namely, 'Plato' and 'someone saying something false', supposit for the same, since we have posited that Plato says something false; therefore, the proposition is true.

P.3 Again, I posit that along with Socrates, Robert says that Plato says something false, and I also posit that Socrates and Robert say these propositions with the same intention and they think they say something true, for they think Plato says: 'God does not exist'. Then it is clear that Socrates' proposition and Robert's proposition are entirely alike, both in utterance and in intention, both for the speakers and for the listeners; but Robert's proposition is true, since we posit that Plato says something false; therefore, Socrates' proposition is also true.

P.4 Again, let us posit that John wants to contradict Socrates by saying that Plato does not say something false. Then it is clear that John's proposition is false, since we posit that Plato says something false. Therefore, Socrates' proposition was true, unless you were to say that both contradictories are false at the same time, which is impossible.

O.1 The opposite is argued: for if Socrates says something true, then by the same token Plato says something true; and if Plato says something true, since he says that Socrates says something false, it follows that Socrates says something false; therefore, Socrates' proposition is not true but false.

We should briefly reply that Socrates' proposition is false and not true, for every proposition is false that, along with something true, entails something false; but Socrates' proposition, along with something true, entails something false; therefore, it is false. The major is an infallible rule. Proof of the minor: the case is possible, and I assume that what is posited in the case is true. But from the [description of the] case and Socrates' proposition it follows that Socrates' proposition is true and that it is false; and this conjunctive consequent is false and impossible; therefore, it is obvious that Socrates' proposition, along with something true, entails something false.

Now, then, it remains to show how Socrates' proposition and the case entail that it is both true and false.

I prove that it is true: for the case posits that Socrates' proposition exists, and it was said earlier that any proposition along with the assumption that it exists entails that it is true. But it also appears that it follows that it is false, as was argued: for if it were true, then Plato's proposition would likewise have to be true, from which it follows that Socrates' proposition would be false; and similarly, for the same reason, we would have to say that Plato's proposition would be false.

Therefore, we only have to respond to the arguments, which are very difficult. And we should revert to the points made in connection with the previous sophism.

P.1 To the first the reply is that although things are as Socrates' proposition signifies as far as its formal signification is concerned, nevertheless, things are not as the proposition implied by it, and by the [description of the] case would signify, for it follows that it is true, and that is not the case.

P.2 Likewise, to the second it is replied that where a proposition can have reference to itself, whether immediately or mediately, according to which it follows that it is false, it is not sufficient for its truth that its subject and predicate supposit for the same, but it is also required that the subject and the predicate of that consequent, namely, the one that states that the proposition in question is true, supposit for the same, as was said above.

P.3 But the third and fourth arguments are difficult. And concerning the third we should say that without a doubt, Socrates' proposition and Robert's proposition are similar in utterance and intention of the speaker and hearer alike, and yet they are not equivalent, because Plato's proposition, of which both of them were speaking, is referring to [*habet reflexionem super*] Socrates' proposition and not to Robert's proposition. Therefore, Socrates' proposition

and Plato's proposition along with the case entail that Socrates' proposition is false, but they do not entail this concerning Robert's proposition; indeed, that one is true.

Then it is asked how the equivalence of these propositions can be understood if not in the manner stated above.

To this I reply that where a proposition is apt to have reference to itself, because its terms supposit for propositions, it is also necessary that the equivalent proposition be apt to have reference to it.

For example, let the first proposition be A, and the second B; if B has to be equivalent to A, it is necessary that, in any case in which A has reference to itself, so also B has reference to A, so that it is necessary in every case that if one is true, then the other is true. But the second will not have such reference to the first, unless it asserts the consequent implied in the first, namely, that A is true. But if this consequent *is* added to it, then it will be equivalent to the first. Therefore, let Socrates' proposition be that Plato says something false, then Robert's equivalent proposition will be 'Plato says something false and A is true', positing that Socrates' proposition is called 'A'—for this proposition of Robert's does not add anything that is not implied indirectly [*consecutive*] by Socrates' proposition, in the case where Socrates' proposition exists. And we posit this case by positing that they are equivalent or contradictory—for if they do not exist, then they cannot be equivalent or contradictory. In general, we can in this way, from every proposition and its being posited in existence, construct its equivalent.

For example, the following posited in existence are equivalent, namely, Socrates' proposition that a man runs—and let it be named by the proper name 'B'—and the equivalent proposition that a man runs and B is true. This addition is not needed, however, when the proposition in question is not apt to have reference to itself; but when it can [have reference to itself] this has to be added, in such a way that if there is reference to the first, then there is reference to the second [of the two equivalent propositions].[187]

P.4 I think one should reply in a similar manner to the fourth argument. For Socrates' proposition and John's proposition are both false and do not contradict [each other], for it is possible to have reference to one, from which it follows that it is false, while there is no reference to the other, as is posited in the case. Therefore, in order to contradict Socrates' proposition, one has

187. Unfortunately, the formulation of the text is rather awkward here, but the point seems to be clear. For any proposition p, if p exists and it is named by the proper name A, its equivalent can be formulated as follows: p and A is true. The addition 'A is true' is not needed, however, in cases where p is not self-reflective, but it is needed if p is self-reflective, whether directly or indirectly (as in the case of the sophism).

to contradict the conjunction consisting of it and the consequent implied by it, namely, [the conjunction] to which we said it was equivalent, so that John should say 'Plato does not say something false or A is not true'. For in this way they could not possibly be true or false together, nor is it illegitimate if more terms are expressed in the one than in the other, for in one they are explicitly expressed and in the other they are implicitly and equivalently contained.

But someone will have doubts again, for if the propositions of Socrates and John are contradictories, then I posit that they stay in existence forever by divine power. It is agreed that they will never be able to be both true or both false because of the change of external things. Then I posit that the case will change so that Plato does not say this: 'Socrates says something false', but he says this: 'John says something false'. Then it is asked with respect to Socrates', John's, and Plato's [propositions] whether each is true or false.

And I declare that Plato's proposition is false, for it follows from it and the case that it is false. For if it is posited to be true, then it follows that John's proposition is false, and if John's proposition is false, then this is either because Plato says something false or because Socrates' proposition is true. But both entail that Plato's proposition is false, and then it follows again that John's proposition is false and Socrates' proposition is true. For Socrates asserts only that Plato says something false, and this is so, and Plato does not make any reference to Socrates that would entail that Socrates' proposition is false; therefore, it is true, and John's proposition contradicting it is false, for it is a disjunction both of whose members are false.

Ninth sophism: Socrates says something true

The ninth sophism is akin to the previous one and runs: 'Socrates says something true'.

Here let it be the case that Socrates says only the proposition 'Plato says something false', and Plato, on the contrary, says only the proposition 'Socrates says something true'. It is asked, then, whether Plato's proposition is true or false. And the same could be asked about Socrates' proposition.

P.1 It is argued that Plato says something true: for either he says something true or he says something false. If he says something true, then I have the proposition to be proved; and if he says something false, then, it still follows that he says something true; therefore, in every case it follows that he says something true.

P.1.1 Then I prove the assumption, namely, that if he says something false

it follows that he says something true: for if he says something false, then Socrates does not say something true, and if Socrates does not say something true, then Plato says something true, and I have the proposition to be proved. Therefore, the sophism is proved, namely, that Socrates says something true.

O.1 Next, it is disproved in a similar manner: for Plato either says something true or says something false. If he says something false, then I have the proposition to be proved, and if he says something true, then it still follows that he says something false, and I again have the proposition to be proved.

O.1.1 Therefore, I prove the assumption, namely, that it follows that if Plato says something true, then Plato says something false: for if he says something true, then it follows that Socrates says something true, and if Socrates says something true, then it follows that Plato says something false; therefore, etc.

We should briefly declare, just as we did earlier, that both propositions are false, for I assume that things are as posited in the case, since this is possible, and thus the proposition expressing the case is true. Therefore, every proposition is false that together with the assumption of this case entails something false, since something false does not follow from truths but from falsities; but both propositions together with the case entail something false; therefore, etc. I prove that both propositions, together with the case, entail something false: for it follows that the same proposition is true and false, without equivocation, and this is false. But I prove next that Plato's proposition with the case entails that the same proposition, namely, Plato's, is true and false: for the case posits that it exists, but it has been said that every proposition together with another that says that it exists entails that it is true. And then it follows further that, if it is true, then it is false; therefore, it follows that it is true and false, and the same argument applies to the other.

But then it is asked whether they are impossible.

And it seems that they are: for something possible does not entail something impossible, namely, that the same proposition is true and false.

Contra: every proposition is possible that, although it is false, can be true on account of a change in the things signified; but Plato's proposition, namely, that Socrates says something true, can be true if we assume that Socrates says this: 'God exists'; therefore, it is possible and not impossible. And thus it is clear that Socrates' proposition is also possible, for it would be true if Plato said that a man is a donkey.

O.1 Then I respond to the argument thus: neither [proposition] entails something impossible, but both of them and the case together do entail something impossible. Therefore, I concede that their conjunction with the assumption of the case yields an impossibility. And this often happens, namely, that a conjunction is impossible whose two categorical [members] are possible, as when I say: 'Everything running is a horse, and a man is running'. This entails

something impossible, namely, that a man is a horse. Likewise, this is also impossible: 'Socrates runs and Socrates does not run', even though both [of its] members are possible.

P.1 Then we should respond to the argument that claimed that Plato's proposition was true. When it was said that it was true or false, [in reply to this] I concede that it is false.

P.1.1 And when it is said that it follows that if it is false, then it is true, I deny the consequence. And when you prove 'for if Plato says something false, then it follows that Socrates does not say something true, but something false', this I concede. And when you go on to say: 'and if Socrates says something false, then it follows that Plato says something true', I deny the consequence, for Socrates' proposition is not false because the case is other than it signifies according to its formal signification (for in this way it signifies that Plato says something false, and this is the case). It is false because the consequent implied by it and the case, which is true, is false (for that consequent is that A is true, positing that Socrates' proposition is named by the proper name A, and this is not the case, for it [namely, A] is not true). And if it is said that Socrates' proposition saying that Plato says something false is true—for its terms supposit for the same, and the case is just as it signifies, and its equivalent that Robert utters is true, and its contradictory that John utters is false—we should reply to all these points as we did in connection with the previous sophism.

Tenth sophism: There are as many true propositions as false ones

The tenth sophism has a similar import, namely, 'There are as many true propositions as false ones'.

Let us posit the case that there are only four propositions: first, 'God exists', second, 'A man is an animal', third, 'A horse is a goat', and the fourth is the sophism given above. Given this case, it is asked whether the sophism was true or false.[188]

P.1 And it is argued that it was not true, for then things would not have been as it signifies; rather, more [propositions] would have been true [than false], for there would have been three true [propositions] and one false [proposition].

188. In view of Buridan's subsequent discussion, the past tense of the verb is significant here.

O.1 Next, it is also argued that it is not false: for if it were, then things would be as it signifies, for there would be two true and two false [propositions]; therefore, it will be true.

And I briefly reply that the sophism is false, for it, together with the case, entails both that it is true and that it is false.

O.1 And the argument for the opposite [side] is solved, for [the sophism] is not false because the case is otherwise than it signifies according to its formal signification, but because things are not as is signified by the proposition that is virtually implied by the sophism and the case, as a consequent is implied by its antecedent. For this is what is implied by them in this way: 'A is true' (provided that the sophism is named by the proper name A), and things are not as would be signified by 'A is true'.

But it is asked whether the sophism is possible and whether it can be true.[189] And I reply immediately that it is possible, for it is possible that there should be as many true [propositions] as false ones, as when there are only these four: 'God exists', 'God is good', 'A man is a donkey', and 'God does not exist'. I also say that it can be true in the case in which we take the time consignified by the verb not to be the time at which it is formed but the time at which only the four propositions mentioned above existed. For this is how this can also be true: 'Every proposition is negative', but it cannot be true if the time consignified by the verb is taken to be the time at which it is formed; and neither can the present sophism be true [in this way]. If, however, the case posited in the sophism were as was stated earlier, then someone else coming along later could truly say with reference to the time of the case: 'Exactly as many propositions were true as were false'. But using a verb of present tense one cannot truly say this, except in the way just described, namely, by taking the time of the verb to be a time other than that which precisely coexisted with their proposition.

Eleventh sophism: I say something false

The eleventh sophism, which has similar import, is 'I say something false'.

It is assumed that I say nothing else apart from the proposition 'I say something false'; I ask, then, whether my proposition is true or false. If you say that it is true, then things are not as my proposition signifies; therefore, it follows

189. Let us not forget Buridan's earlier distinction between a proposition's being possible and its possibly being true in the third conclusion of the first sophism.

that it is not true but false. If you say that it is false, then it follows that things are as it signifies; therefore, it is true, and this also applies because then its terms supposit for the same thing, and it is affirmative; whence it clearly follows that if it is false, then it is true. And then from this it follows further that it is necessary to concede that it is true and false, for he who concedes the antecedent has to concede the consequent, and it has to be conceded either that it was true or that it was false. And then it follows that if it was true, it was false; and if it was false, it was true; therefore, both have to be conceded. But then again, to concede this is unacceptable, for then, if its contradictory were true, two contradictories would be true together. And if it were false, then two contradictories would be false together, and all these cases are impossible.

Then it is asked how the contradictory of the sophism is to be formed and whether it is possible or impossible.

I respond briefly that the sophism is false, for it and the proposition expressing the case entail something false, but the proposition expressing the case is assumed to be true; and the falsity that thus follows is that the sophism is both true and false at the same time. But a proposition is false from which, along with some truth, some falsity follows.

And we respond to the argument to the opposite effect in accordance with what was said earlier. For when it is said that if it is false then it follows that it is true, I deny the consequence, and when you prove this [by saying:] 'for if it is false, then things are just as it signifies', I concede this with respect to its formal signification. But this is not sufficient [for its truth] because of the reference it has to itself. It is not true because things are not as the consequent entailed by it together with the case would signify. For that consequent would be that A is true, positing that my proposition would be named by the proper name 'A', and things are not as the proposition 'A is true' would signify.

And the reply is similar to the claim that 'its terms supposit for the same things'.

But you could still object, arguing that if it is false, then it follows that it is true, for it follows that if it is false, then it exists, and thus, from it and the fact that it exists it follows that it is true; therefore, it follows that if it is false, then it is true; and whoever concedes the antecedent has to concede the consequent; therefore, we have to concede that it is true.

To this I respond that it does not follow that if it is false, then it is true, although I do concede that if it is false, then it exists, and I also concede that from it and the fact that it exists it follows validly that it is true. But I do not concede the antecedent, indeed, I deny it, for the antecedent was composed of the sophism and the fact that it exists, and I deny the sophism; whence I also deny the consequent, namely, that the sophism is true.

But then the problem arises as to how you can contradict me. For if you utter a negative involving a subject similar in utterance, by saying 'I do not say something false', you do not contradict me, for when we have two contradictories, the terms of one should supposit for the same things as those for which the terms of the other supposit, and this would not be the case in this event, for in my proposition the term 'I' supposits for me, and in yours it supposits for you. And if you were to utter a negative by changing 'I' into 'you', namely, by saying to me, 'You do not say something false', then it is clear that you do not correctly contradict me, for the contradictories have to have the same subject and the same predicate, and it is not enough that the diverse predicates supposit for the same thing.

Again, my proposition is false; and yours is also false; therefore, they are not contradictory.

Solution: I reply that contradictories do not have to be entirely similar utterances. For in the first place they have to be dissimilar with respect to affirmation and negation. Second, they can be dissimilar with respect to the signs [of quantity] and the modes, just as these two are contradictories: 'Every man runs' and 'Some man does not run', and similarly these two: 'Socrates possibly runs' and 'Socrates necessarily does not run'. But sometimes we can also change the utterance of the predicate because of some relative pronoun, as when we say 'Every man who has a horse sees it'. Then, if we want to contradict this otherwise than by prefixing the negation to the whole proposition, then the predicate will have to be changed, for this is not its contradictory: 'Some man who has a horse does not see it', for these can both be true in a case in which every man has a horse that he sees and another that he does not see; therefore, its contradictory has to be this: 'Some man who has a horse does not see a horse that he has'. But this will be discussed elsewhere in detail.[190] Furthermore, as has been said in connection with the eighth sophism, because of the reference that a proposition has or is apt to have on itself, it is necessary to add other utterances when contradicting it, so that reference may be made to the consequent implied by the first proposition and the case. Also, if someone speaks about himself in the first person, it is necessary for someone else contradicting him to speak in the second person, and not in the first, as when Socrates says: 'I run', Plato does not contradict him by saying: 'I do not run' but by saying to him: 'You do not run'. For one should primarily attend to the intention, since we use words only to express the intention. Therefore, if we cannot express the mental contradictory without changing the utterance, then we have to change it. Thus it seems that you contradict me by saying 'You do

190. See 4.4.

not say something false' but adding what has been said in the earlier sophisms. For if you wish to say something equivalent to my proposition, then you will say this: 'You say something false and A is true', assuming that my proposition is named by the proper name 'A', and then the contradictory would be 'You do not say something false or A is not true', and this disjunction is true.

Twelfth sophism: God exists and some conjunction is false

The twelfth sophism is 'God exists and some conjunction is false'.

Let us posit that this is written on the wall and that there exists no other proposition than it and its parts. And then it is asked whether it is true or false.

We argue as before, for if it is true, then it follows that it is false; and if it is false, it seems to follow that it is true, for things are as it signifies, since its contradictory is false, namely this: 'God does not exist or no conjunction is false'.

Solution: we should say that it is false, and the argument is solved as before. For although things are as it signifies according to its formal signification, things are not as would be signified by the consequent implied by it and the case, and, assuming it to be named by the proper name 'A', its contradictory would be this: 'No God exists or no conjunction is false or A is not true'.

Similar sophisms could be formed concerning disjunctive propositions, as 'A man is a donkey or some disjunctive is false', positing that there is no other disjunctive; and the same goes for exceptive [propositions], as for example, 'Every proposition other than an exceptive is true', positing that there are no propositions except this exceptive and two others, namely, that God exists and that a man is an animal; and thus also with exclusives, as when Socrates says: 'God exists' and Plato says: 'Only Socrates says something true', and nobody says anything else. Other sophisms can also be formed about the fact that it is possible for a proposition to be doubtful or not doubtful, known or not known, believed or not believed.

Thirteenth sophism: Socrates knows the proposition written on the wall to be doubtful to him

The case is posited that this proposition is the only one written on the wall and that Socrates looks at it and examines it and doubts whether it is true or false, and that he knows well that he doubts it, and then it is asked whether it is true or false.

And it is argued that it is true: for the case is posited to the effect that Socrates truly knows that proposition to be doubtful to him; and this is what this proposition signifies; therefore it is true.

Again, if we have similar propositions, then if the one is true, then so is the other; but whoever would utter a similar proposition would say something true; therefore it is true.

But the opposite is argued: for every proposition is false that entails something impossible; but here there follows something impossible, namely, that Socrates both knows and doubts the same proposition. For according to the case he doubts this proposition, but nevertheless he knows it: for he knows the case to be as it signifies, since he knows that it is doubtful to him. Indeed, it is also possible that he knows himself to know that it is doubtful to him, and that proposition signifies nothing more; but to know that things are as the proposition signifies is to know the proposition—for you know the proposition 'A man is an animal' because you know that it is so [that a man is an animal].

Indeed, this is confirmed by the fact that if Socrates pays attention, he knows that proposition to be true, for if you say a similar one, he will know that you say something true; therefore, by the same token, he knows this to be true. Similarly, if you were to say its contradictory, he will know that you say something false. But whoever knows one contradictory to be false knows the other to be true, if he pays attention to it and knows that they are contradictories; therefore, etc.

Some people respond to this sophism by saying that according to the case there are two propositions written on the wall [expressed in one], namely, one whole [proposition] to the effect that Socrates knows that the proposition written on the wall is doubtful to him, and another that is a part of the former, namely, that the proposition written on the wall is doubtful to him. Now Socrates does indeed know this partial proposition, namely, that the proposition written on the wall is doubtful to him, but he does not know the total one; rather, it is doubtful to him, and this is not impossible; therefore, the proposition is conceded to be true.

But this solution does not seem to eliminate the problem, because it is not true that according to the case there are two propositions written on the wall,

since it has been said elsewhere that no part of a proposition is a proposition, as long as it is a part of a proposition.[191]

Again, the case did not posit a proposition to be written on the wall such as the one that the response concerns, but rather the proposition 'Socrates knows the proposition written on the wall to be doubtful to him'; however, the infinitive expression 'the proposition written on the wall to be doubtful to him' is not a proposition. And if it supposits for a proposition, then it supposits for nothing but the total one, for there is no other proposition written on the wall; therefore, if he knows some proposition written on the wall, then he knows that total one.

Again, it was posited not only that he knows that it is doubtful to him but that he knows himself to know this. Let us then posit this, for it is possible, and thus Socrates not only knows that the proposition is doubtful to him, but he also knows that he knows this. And thus it seems to follow that he knows the total proposition and not only the partial one.

Therefore, I respond otherwise by conceding that the proposition written on the wall is doubtful to him and that he knows for certain that it is doubtful to him; indeed, he knows himself to know this, and then the question is whether he himself knows that proposition.

And for the solution of this question we should note that [the term] 'concept' is broader than [the term] 'knowledge', for a concept can be without complexity and can be complex without an enunciation.

But in us there is knowledge only of some proposition or other [*alicuius enuntiationis*], and for there to be knowledge, it is required that a man assent to a true proposition with certitude and evidentness [*cum certitudine <et evidentia>*].[192] And we say that a proposition of this kind [*enuntiationem huius modi*], i.e., one to which we assent with such certitude and evidentness, is known, and [likewise,] we are said to have knowledge of it and indeed of the things signified by its terms as well.

Therefore, we distinguish between two kinds of known things, namely, those that are known primarily and immediately, and such is an enunciation to which we assent in the manner described, and those that are known remotely, namely, the things signified by the terms of the enunciation known in the first way.

Now, it is impossible for a proposition to be both doubtful and known to you as something known primarily, for you do not assent with certainty and evidentness to a proposition that is doubtful to you; but you do assent to a

191. See 1.7.1.

192. See J. Zupko, "Buridan and Skepticism," *Journal of the History of Philosophy* 31, 2 (1993): 91–221, at 204 n. 30.

proposition known primarily in this way; therefore, it is clear that the proposition written on the wall is not known to Socrates as something known primarily, since it is doubtful to him, and he does not know whether it is true or false. But I say that it is known by Socrates as something remotely known, for Socrates in his mind forms the mental proposition: 'The proposition written on the wall is doubtful to me', and to that mental proposition he assents with certainty and evidentness, for which reason that mental proposition is known to him as something known primarily. And since the subject of that mental proposition supposits for the proposition written on the wall, it follows that Socrates has knowledge about the proposition written on the wall in the sense that it is about something known remotely.

But again I say that if Plato says the proposition 'Socrates knows the proposition written on the wall to be doubtful to him', and if Socrates hears and correctly understands Plato, then Socrates will at once also know Plato's proposition as something known primarily, for he will assent to Plato's proposition with certainty and evidentness as to something true and not [something] doubtful to him. Indeed, if a proposition entirely similar to the one written on the wall were written on paper, Socrates seeing and reading it will know that it is true, nor will it be doubtful to him.

But then the question arises as to how it is possible for two propositions to be entirely alike and yet for a man to be certain about one and be in doubt about the other, even as he attends to them and knows that they are alike.

And I declare that this is very possible, for he does perceive that the one written on the wall has reference to itself; therefore, he doubts whether it is false because of this self-reference, as happened with the preceding sophisms. But he also perceives that Plato's proposition, or the one written on paper, has no reference to itself; therefore, he has no doubt as to whether it is true.

But again, when it was argued that if Plato says the contradictory, namely, 'Socrates does not know the proposition written on the wall to be doubtful to him', Socrates will at once know that Plato's proposition is false, then this I concede.

And when you conclude 'therefore, he has to know that the proposition written on the wall is true, for it is the contradictory [of Plato's proposition]', I say that this does not follow, for he does not know that they are contradictories. For he can be in a state of doubt whether the reference that the one written on the wall has to itself impedes the contradiction.

And so, finally there is a doubt as to whether the proposition written on the wall is true or false.

And I reply that it is true, for the reference it has to itself does not bring it about that it is false but only that it is doubtful, whence it does not follow that it is false.

And when it is argued that it entails something impossible, this I deny: for it does not follow that it is known but only that it is known as something remotely known.

But when you prove that he knows it—for Socrates knows things to be as it signifies—this I concede. But when you conclude 'therefore, he does not doubt whether it is true, if he pays attention', I say that this does not follow, for Socrates has seen in connection with the preceding sophisms that many propositions were false because of the reference they had to themselves, although things were as they signified. Therefore, because of his inexperience, he can believe that even this is false, for he sees that it has reference to itself, or at least he may be in doubt about this.

But, adding to the earlier posited case that Socrates is the wisest, one may ask further concerning this sophism whether in that case it is true or false.

And I say that the case is impossible: for given that Socrates is the most educated in the field, and that he attends as much as he can to that proposition, it follows that, if it is true, then he knows that it is true, and if false, then he knows that it is false, and neither of these is compatible with its being doubtful to him.

But if this is removed from the case, namely, that it is doubtful to him, then it is asked whether it is true or false. And I say that it is false and that Socrates also knows that it is false, and not to be doubtful to him.

Fourteenth sophism: Socrates sits or a disjunctive [proposition] written on the wall is doubtful to Plato

Let us posit the case that this is the only proposition written on the wall and that Plato sees it and is trying as best he can to find out whether it is true or false. And I also posit that Plato is in every art and science the most educated of all people; however, Plato does not see Socrates, and so he does not know whether he is standing or sitting, and thus he is in doubt as regards the proposition 'Socrates sits'. Then it is asked how Plato is related to the whole expression, which is a disjunctive [proposition], namely, whether he knows that it is true, whether he knows that it is false, or whether he is in doubt about it.

And first it is argued that Plato does not know that it is true: for it would be necessary that he know one or the other member to be true, since for the truth of a disjunctive it is required that one of its disjuncts be true. But, according to the case, he does not know the first disjunct to be true, namely, that Socra-

tes sits; and he does not know the second disjunct to be true, either, for that would entail that the second disjunct is true and false, which is impossible.

I prove the consequence. First, it would follow that it is true, for nothing is known to be true except something true. Second, it would also follow that it is false, for if he knew it to be true, then he would know the disjunctive [proposition] to be true, since it suffices for the truth of a disjunctive that one of its members be true; therefore, it would not be doubtful to him, and, consequently, that second member would be false, since it says that the disjunctive is doubtful to Plato.

Next it is also argued that Plato does not know that disjunctive to be false: for to know a disjunctive to be false, one has to know that both of its disjuncts are false, and it is posited that Plato does not know whether the first [disjunct] is true or false.

Again, if he knew the disjunctive to be false, then he would know its contradictory to be true, if he wished to consider it, for he is posited to be most educated in every art.

But the consequent is false, since its contradictory is 'Socrates does not sit and no disjunctive written on the wall is doubtful to Plato'. But he does not know this conjunction to be true, for he does not know whether the first conjunct is true or false.

Next it is argued that the disjunctive is not doubtful to Plato: for if it is doubtful to him, then this he knows well, indeed, anyone who is barely educated, if he wants to consider some proposition, he will know well whether he doubts it. But if he knows that it is doubtful to him, then he knows that its second disjunct is true, which says [precisely] this. And if he knows that second disjunct to be true, then he knows the disjunctive to be true, from which it follows that it is not doubtful to him.

I respond that Plato does not know the disjunctive to be true and that he does not even know it to be false, as the arguments made so far have argued; therefore, it remains that it is doubtful to him and that he knows that it is doubtful to him.

And this is also proved: for the second disjunct of this disjunctive is false, as will be proved; and this Plato knows well, since he is assumed to be the most educated in this art; therefore, he knows that the disjunctive is false if its first disjunct is false and true if its first disjunct is true. Since, therefore, he knows himself to doubt the first disjunct, he knows that the whole disjunctive is doubtful to him.

Now, then, it has to be shown that the second disjunct of the disjunctive is false.

This antecedent is proved thus: a proposition that with another true [proposition] entails something false is false; but this is such; therefore, etc.

I prove the minor: for, since the whole case is possible, I posit that the proposition expressing the case is true; but the case and the second disjunct entail something false, indeed, impossible, for it follows that that disjunctive is both doubtful and not doubtful for Plato. First it is proved that it is doubtful, for this is what the second disjunct says; second, that it is not doubtful, as was argued earlier.

Again, even the second disjunct and the case also entail that it is both true and false. It is proved first that it is true, for by the case it is posited to exist, and it has often been said that any proposition, together with another saying that it exists, entails that it is true.

But from this it follows again that it is false, for if it is true, then Plato knows this, since he is posited to be most educated, and he knows well whether he doubts that disjunctive. And if he knows that it is true, then he knows that the disjunctive is true; therefore, he does not doubt it, and, consequently, that second disjunct is false.

Then we respond to the arguments on the opposite side: for although Plato knows things to be as the second disjunct signifies as far as its formal signification is concerned, nevertheless, he does not know it to be true, indeed, [he knows it to be] false, for he knows it to have such reference to itself that entails, along with the true assumption of the case, that it is false. And he also knows that every such proposition is false.

But perhaps there is a rejoinder to this position. For if the disjunctive is doubtful to Plato, then it is necessary that its contradictory also be doubtful. But this is false, for the contradictory is that Socrates does not sit and no proposition written on the wall is doubtful to Plato; and Plato does not doubt that, for he knows that it is false, since it is a conjunction whose second conjunct is false; it follows, therefore, that Plato should not doubt the proposition written on the wall, but he should know that it is true.

Solution: I say that that contradiction is not formulated satisfactorily because of the reference that the first has to itself; therefore, it is necessary to explicate the consequent implied by it and the case, so that if the disjunctive written on the wall is named by the proper name 'A', its equivalent will be this: 'Socrates sits or the disjunctive written on the wall is doubtful to Plato and A is true'. And then the contradictory will be this: 'Socrates does not sit and no disjunctive written on the wall is doubtful to Plato or A is not true'. And then I say that this is doubtful to Plato, for it is a disjunctive composed of a conjunction that is known to be false and of a categorical that is doubtful; therefore, the whole is doubtful.

Fifteenth sophism: To someone is propounded a proposition doubtful to him

And I posit the case that the above proposition is propounded to you and that you do not know whether another one is propounded to someone else. And I also posit that you are very educated in the arts and that you attend to that proposition as much as you can [to find out] whether it is true or false. And then it is asked whether you know that proposition to be true, whether you know it to be false, or whether it is doubtful to you.

It is argued first that you do not know it to be false, for you cannot know it to be false unless you know that to no man is propounded a proposition doubtful to him. For it is obvious that it would be true, if in Rome there were propounded a proposition to Robert that is doubtful to him; but you cannot know whether it is so; therefore, you cannot know it to be false.

Alternatively, we argue thus: if you knew it to be false, then you would also know its contradictory to be true if it were propounded to you, since you are the most educated in every art; but this is impossible, namely, that you should know that this is true: 'To nobody is propounded a proposition doubtful to him'; therefore, etc.

Next, it is argued that you do not know that it is true: for you do not know about other people, namely, whether a proposition doubtful to someone is propounded to him; therefore, you do not know that a proposition doubtful to someone is propounded to him unless you know that the one propounded to you is doubtful to you. But it is impossible for you to know that to be true and also for you to know it to be doubtful to you, for then it would follow that it would be both doubtful and not doubtful to you. For it would not be doubtful to you, because you would know that it is true, and it would also be doubtful to you, because you would know that it is doubtful to you.

Next, it is argued that it is not doubtful to you, for if it were, then you would know very well that it is; therefore, you would know well that to someone, namely, to you, is propounded a proposition doubtful to him; and thus you would know that things are as it signifies; therefore you would know that it is true, from which it would follow that it is not doubtful to you. And so then it follows that this proposition is neither known to you to be true nor known to you to be false, nor is it doubtful to you. And this is impossible in the case posited, namely, [the case in which] you consider it as carefully as you can and that you are sufficiently clever to consider this.

I reply that this proposition would be doubtful to you and that you would know it to be doubtful to you: for you cannot know that it is false, as has been correctly argued, nor can you know that it is true, as has also been correctly

argued; therefore, it remains that you would doubt it. And the reason for this is that if to someone else were propounded a proposition doubtful to him, then this proposition [namely, the sophism] would simply be true; and if to nobody else were a proposition doubtful to him propounded, then it would be false.

And I prove this: for that [proposition] is false that together with something true entails something false; and it would be so in this case.

Proof: I assume that the above-described case is true, for it is possible; but from this proposition and from the case it follows that the proposition is both true and false, which is impossible.

I declare first that from the proposition and the case it follows that the proposition is true: for the case posits that the proposition exists, and it has often been said that any proposition, together with another saying that it exists, entails that it is true.

Then it is shown that the proposition and the case entail that the proposition is false. For you know well that it is doubtful to you, and you know that this is what is signified by its formal signification; therefore, you know well that things are as it signifies with respect to its formal signification.

Next, since you are very educated, you know well that every proposition is true if things are as it signifies by its formal signification, unless it happens to have reference to itself from which it follows that it is false; therefore, you have to conclude and know this disjunctive, namely, that it is either true or has reference to itself on account of which it is false.

Furthermore, being very learned, you should know whether in some case or other such a proposition can have reference to itself. And if you know that it cannot, then you know that it is true; but that is not the case [*quod est falsum*], as has been said. Therefore, you know that in some case this proposition can have such self-reference, but you know well that this would not be the case if to someone else were propounded a proposition doubtful to him, for you know well that under such circumstances the proposition would be true; therefore, it remains that you know well that there would be such self-reference which would entail that it is false if no other doubtful proposition were propounded; therefore, it would be false. And thus it is clear that the proposition and the true case posited earlier, namely, that no other doubtful proposition is propounded, entail that it is false. And this is what we wanted to prove.

Thus, therefore, it has been proved that the sophism is true if to someone else another doubtful [proposition] is propounded, and that it is false if to nobody else another doubtful [proposition] is propounded. But you do not know whether some doubtful proposition is propounded to someone else or not; therefore, you have to doubt whether it is true or false.

To the arguments on the opposite side we should reply that you know very well that it is doubtful to you and that things are as it signifies with respect to its formal signification. But from this it does not follow that you know that it is true, for it can have such reference to itself that renders it false, and you do not know whether it does in fact have it.

Someone might retort that if you know one of two contradictories propounded to you to be false, it is necessary, provided you pay attention and you are knowledgeable, that you know that the other is true. But it is obvious that if the contradictory of the sophism were propounded, namely, 'To nobody is propounded a proposition doubtful to him', you would well know that that will be false, since you know that you constitute a counterinstance, because you know that what is propounded to you is doubtful to you; therefore, it follows that you know the sophism to be true.

Again, it is argued most powerfully that you do not doubt the sophism; rather, you know that it is true, for I argue as follows. 'To you a doubtful proposition is propounded, and you are someone; therefore, to someone a doubtful proposition is propounded'. This syllogism is formally valid, for it is expository. But you know the premises to be true; therefore, being knowledgeable and attentive, you know the conclusion to be true, for you know well that nothing false follows from true [premises]; but the conclusion is the sophism; therefore, you know that it is true, and, consequently, it was incorrectly said that it was doubtful to you.

To the first of these objections the reply is that the contradictory was not formulated satisfactorily. Because that proposition can have reference to itself, whence it follows that it is false, what should be formulated is the contradictory of the conjunction consisting of [the sophism] and [the proposition] implied by it and by the case, namely, that it is true, so that if that [implied] proposition is named by the proper name 'A', then its [the sophism's] equivalent will be this other proposition: 'To someone is propounded a proposition doubtful to him, and A is true'; therefore, its contradictory will be 'To nobody is propounded a proposition doubtful to him, or A is not true'. And then it will be obvious that this will be doubtful to you just as is the preceding, for the first member of this disjunctive you know to be false, but of the second you do not know whether it is true or false.

To the second objection I reply that this argument was valid: 'To you a doubtful proposition is propounded, and you are someone; therefore, to someone a doubtful proposition is propounded'. And I say that you know well that the argument is valid, and that the premises are true, and, consequently, you also know well that the conclusion is true.

But the conclusion is not the sophism; rather, it is another similar [proposition] that is known to be true because its terms supposit for the sophism,

which you know to be doubtful. Nor is it equivalent to the sophism that had already been posited to exist earlier; indeed, to form the equivalent, one has to say that to someone is propounded a proposition doubtful to him and A is true, assuming, as before, that the sophism is named by the proper name 'A'. And then this does not follow from those known premises.

We should note, therefore, that if someone first propounds to you this: 'Something doubtful is propounded to someone', you will be in doubt on considering whether it is true or false. But this being the case, whoever else comes up to you saying that something doubtful is propounded to someone, you will know that he says something true, and that his proposition is true, not for itself but for the first [proposition].

But then you will posit another case, namely, that Socrates and Plato come along together and both say the proposition 'Something doubtful is propounded to someone'; and neither of them speaks sooner than the other, and you equally attend to both. It is asked, then, whether both propositions will be doubtful to you or the one doubtful and the other known to be true.

I say that both will be equally doubtful to you: for you cannot know either to be true for the other, since for whatever reason you would know the one to hold, for the same reason you would know the other to hold, and conversely. And thus you would know both of them to be true, which is false, for perhaps they are false, in the case where nothing else that is doubtful is propounded to anyone. For in that case, if you knew them to be true, you would not doubt them; therefore, to nobody would anything be doubtful, whereas those propositions would signify just the opposite of this, whence they would be false. But, once the doubt already exists, then whatever other doubtful proposition signifying that to someone something is doubtful would come to you, that proposition would be known by you to be true, not for itself but for the other that you already doubt.

Finally, concerning this sophism someone might wonder and ask what would be the situation if it were not posited to be the case that you are knowledgeable.

And I say that perhaps on account of your lack of knowledge you would not be in doubt, indeed, perhaps on the basis of some arguments you might think it to be true, without any doubt, although perhaps it would be false, or perhaps on account of some other arguments you would believe it to be false, also without any doubt. For it sometimes happens that someone has no doubts concerning something of which he has a false opinion. Whence Aristotle in bk. 7 of the *Ethics* says: "some people who have opinions are not in doubt, but they hold those opinions with certainty."[193] For some people give

193. Aristotle, *Nicomachean Ethics* VII.5.1146b25–30.

no less credence to that concerning which they have an opinion than others do to that concerning which they have knowledge.

Sixteenth sophism: You will respond negatively

The sixteenth sophism is about the combination of a response with a question. Let the sophism be 'You will respond negatively'. And let us assume that this is propounded to you and that you are under an obligation to respond to what is propounded to you directly either that it is so or that it is not so.

You have to accept this obligation, because any proposition whatsoever that is propounded to you is either true or it is not true, and since by 'being so' we signify that it is true, and by 'not being so' we signify that it is not true; therefore, we can truly respond to any [proposition] that it is so or that it is not so; therefore, you have to accept the obligation that you will respond in this way.

Then, therefore, I posit that you respond to the proposition that is propounded to you, namely, 'You will respond negatively'. If, then, you respond that it is so, I argue against you that you respond falsely: for you concede that you respond negatively, and yet this is not the case; rather, you respond affirmatively. If, however, you respond that it is not so, then I argue against you again that you respond falsely: for you deny that you respond negatively, but in fact you respond negatively.

I say briefly that according to the obligation described you cannot truly respond, but without that obligation you can truly respond, namely, by saying to the one who propounded it that he propounded something false, or that his proposition was false. Or again, you can truly respond that he did not propound something false. Therefore, I say that you ought not to have accepted that obligation, except under the condition that the proposition that was to be propounded to you should not signify something concerning your response, on account of which your response would have reference to itself whence it would follow that it is false.

Thus, when it was argued that you should accept the obligation because any proposition whatsoever that is propounded to you will be true or false, I concede that the proposition that was propounded to you was true or false, for if you respond with nothing, then it was false, and if you respond that it is so, then it was again false, and your response is also false, for it affirms to be true that which is false. But if you respond that it is not so, then it is true, and your response is false, for it denies that which is true.

When it is declared that concerning every true proposition we should say that it is so and concerning every false one we should say that it is not so, this I concede, unless the response has such reference to itself on account of which it thence follows that it is false. But in this case the response needs to be changed.

The same is the case if someone wants to put you under the obligation to respond to the proposition that he is going to propound to you precisely that it is true or that it is not true. For you should not accept the obligation, first of all because you do not know whether he is going to present you with a proposition that is doubtful to you. But even if he wants to oblige you to respond that it is true or false or doubtful, you still should not accept the obligation, except under the aforementioned condition. Therefore, to the proposition 'You will respond negatively', you should not respond that it is true, nor that it is not true, nor that it is doubtful to you, but you can respond that it is false.

But someone will retort that the following are contradictories: 'You said something true' and 'You did not say something true'; and yet whichever of these you give as a response to the person who propounded the sophism to you, your response will be false; and this is impossible.

To this I reply that whichever of these you give as a response without the other, it will be false; but from this it does not follow that two contradictories are false, for they are not [responses given][194] at the same time. But if you were to respond with both, then you would respond negatively and affirmatively at the same time, and if you responded negatively and verified the sophism, then your affirmative response would be true and the negative one would be false; whence two contradictories would still not be false at the same time.

In the same way, if we posit that 'A' signifies every man who responds or is going to respond negatively and [says] nothing else, just as 'man' signifies every man and nothing else, then let the opponent propound to you that you are an A, and then let him ask whether this is so.

For this is tantamount to propounding "you respond[195] negatively or you are going to respond negatively" and then asking whether this is so. And then you cannot truly respond by responding directly that it is so or that it is not so, because of the self-reference; but you can truly respond by saying that what was propounded was false or by responding that it was not false but true.

194. Here I have corrected the current version of the critical text on the basis of Hughes (*Buridan on Self-Reference,* p. 118) and Biard (*Sophismes,* p. 282).

195. Although in the text we have *respondebis* (you will respond), I think this disjunction was intended to be the application of the disjunctive definition of 'A' to 'you'. Indeed, Hughes provides the present tense form, *respondes,* here (*Buridan on Self-Reference,* p. 118).

Seventeenth sophism: You will throw me in the water

The seventeenth sophism concerns some conditional promises or vows. And let the sophism be 'You will throw me in the water'. Let us posit the case that Plato is the master of the bridge and that he guards it with such a powerful military support that nobody can cross it without his permission. And then Socrates arrives, asking Plato with insistence to let him cross. Then Plato, getting angry, vows and takes an oath of the form: 'Certainly, Socrates, if with your first proposition that you will utter you say something true, I will let you pass, but certainly if you say something false, I will throw you in the water'. And then Socrates says to Plato the above-mentioned sophism, namely, 'You will throw me in the water'. The problem then is: what should Plato do to keep his promise?

If you say that he should[196] throw Socrates in the water, then this goes against the promise, for then Socrates said something true; therefore, Plato should have let him pass. And if you say that he should let him pass, it appears again that this goes against the promise and the oath, for then Socrates said something false, in which case Plato should have thrown him in the water.

We should respond that concerning this sophism several questions may be raised.

The first is whether Socrates' proposition, which was posited as the sophism, is true; the second is whether Plato's proposition expressing his promise or vow was true or false; the third concerns what Plato should do to keep his promise and vow.

To the first I reply that Socrates' proposition is a future contingent; therefore, I cannot know whether it is true or false until I see what will be the case with that future act, because it is in the power of Plato to make it true or false. For if he does throw Socrates in the water, then the proposition is true, and if he lets him pass, then it is false.

As to the second question, it is clear that Plato's proposition was a conditional that could not be true in the strict sense, because the antecedent could be true without the consequent. For it was possible that Socrates would have said something very true, say, that God exists, and that Plato would still not have permitted him to pass. Promissive conditionals, however, are conceded to be true in a less strict sense in that when the condition is being fulfilled, then the promise is also fulfilled, as, for example, were I to say: 'If you come

196. Reading *proiiciat* for the text's *proiiciet* (he will throw), in accordance with the preceding context and the next sentence.

to me, I will give you a horse', and then when you come to me I do give you a horse, everybody would hold that I said something true. And speaking in this sense I say that Plato did not say something true, since Socrates fulfilled the condition. For he uttered a proposition that had to be true or false, although not determinately true or false until the future act came about, as one should see [this point] in *On Interpretation*.[197] But given this, Plato cannot fulfill the promise, for because of Socrates' proposition Plato's promise has reference to itself whence it follows that it is false.

Thus when the third question asks what Plato should do to keep his promise, I say that he does not have to keep his promise, nor should he promise anything in this way, but with an exception that excludes the case that Socrates utters a proposition that has reference to the promise such that it thence follows that what is promised cannot be made to happen.

Eighteenth sophism: Socrates wants to eat

Let the case be posited that Socrates wants to eat if Plato wants to eat, but otherwise not. For people often want to have company for a meal in this way, it being the case that without company they do not want to eat. Then let it be posited conversely that Plato does not want to eat if Socrates wants to eat, but does want to eat if Socrates does not want to eat, for he holds a grudge toward Socrates, and so he does not want to eat with him. And then it is asked whether the sophism is true or false. For these two contradict: 'Socrates wants to eat' and 'Socrates does not want to eat'; therefore, one of them has to be true and the other false, whatever case is posited.

If, therefore, you say that Socrates wants to eat, its opposite follows, for it follows that Plato does not want to eat. From which it also follows that Socrates does not want to eat. And if you say that Socrates does not want to eat, its opposite also follows, for it follows that Plato wants to eat, from which it also follows that Socrates wants to eat.

I respond that the case as posited is impossible in the strict sense, for this is a conditional: 'Socrates wants to eat if Plato wants to eat' and there is no valid consequence from the antecedent to the consequent. For it is possible that though Plato wants to eat Socrates does not want to eat. But insofar as conditionals are usually conceded concerning our acts of promising, willing,

197. Aristotle, *On Interpretation* I.9.

vowing, or wishing, this case is possible, for Socrates wishes to verify the proposition 'If Plato eats here, then I eat with him, and if he does not, nor do I', or wishes things to be just as it signifies; and Plato, conversely, wants to verify this: 'If Socrates eats here, I do not eat, and if he does not eat, I eat'. But I say that it is impossible for both of them to fulfill their wishes.

But you ask whether Socrates wants to eat here or not. I reply that unless Socrates and Plato have other acts of will besides the ones mentioned above, neither of them wants to eat. For the will is determined to what it wants, and the will of neither of them is determined to wanting to eat here. Whence this is not valid: 'I want to go to Rome if Socrates goes; therefore, I want to go to Rome'.

But when you say 'it follows that if Socrates does not want to eat here, then Plato wants to eat here', I deny this, for that conditional was false and was not to be accepted; but this categorical is to be accepted, namely, that Socrates wants things to be as signified by this proposition: 'If Plato eats here, then I eat with him', and in the same way Plato hates things being that way and intends the contrary, and from this nothing impossible follows.

Nineteenth sophism: Socrates curses Plato

Let the case be posited that Socrates says: 'Let Plato be cursed if he cursed me, but not otherwise', and Plato says conversely: 'Let Socrates be cursed if he does not curse me, but not otherwise'. Then we ask about the truth of the sophism, namely, whether Socrates curses Plato.

If you say yes, then something unacceptable follows, namely, that Plato curses Socrates and does not curse Socrates. And if you say no, then the opposite follows, for it follows that Plato curses Socrates, and, consequently, Socrates curses Plato.

I say that you posit here this proposition to express the case: 'Socrates says that Plato should be cursed if he cursed Socrates'. I say, therefore, that this proposition may be understood as a conditional, which has the following sense: 'If Plato cursed Socrates, then Socrates says that Plato should be cursed'. And this proposition is false, and impossible, and should not be accepted, for this is not valid: 'Plato cursed Socrates; therefore, Socrates says, . . . etc.'; rather, whether Plato cursed Socrates or not, Socrates says what he says, or even does not say what he does not say. In another way this proposition can be understood so that it is a categorical in the sense that Socrates utters

the proposition 'Let Plato be cursed if etc.'. And this should be conceded, for it is possible that he utters this proposition. We should distinguish in the same way the proposition posited by the case, namely, 'Plato says . . . etc.'.

Then, therefore, we ask the question whether Socrates and Plato speaking in this way are cursing each other. And I say that to curse someone is to utter, using a verb in the optative mood, the following: 'Would that harm come to him'; thus, I understand the same by saying 'Let Plato be cursed' and 'Would that harm come to Plato'. And then I say further that such expressions of a curse are sometimes absolute curses, without adding some condition, as when I say 'Let Plato be cursed', and sometimes they are conditional curses, as when I say 'Let Plato be cursed if he goes to the fields'. And then, since names signify by convention, if you wish to call each of these simply a curse, then I say that both of them cursed the other, although not by the use of an absolute curse.

But then you argue against this: for it follows that if Socrates curses Plato, Plato does not curse Socrates. I deny this consequence, for I did not accept the proposition expressing the case as a conditional, but I accepted that Plato said such a proposition, and it is true that he said it; and so he cursed Socrates with a conditional curse, whether Socrates said something or not. If, however, you do not wish to call a conditional curse simply a curse, then I say that neither of them cursed the other. Nor does it follow that if Socrates did not curse Plato, then Plato cursed him, for it does not follow that Plato says anything apart from what he said, and that was only a conditional curse.

To complete the previous sophism more effectively, given that a verbal curse seems to designate wishing that evil come to someone, I posit also this sophism:

Twentieth sophism: Socrates wishes Plato evil

Positing that Socrates wishes Plato evil conditionally, namely, should Plato wish Socrates evil, and, conversely, Plato wishes Socrates evil, should Socrates not wish Plato evil, it is asked whether in terms of the sophism Socrates wishes Plato evil or not.

And one might argue as has been argued about the curse.

And I reply, as before, that the propositions expressing the case can be taken as conditionals, and then they should not be accepted, for it does not follow that if Plato wishes Socrates evil, then Socrates wishes Plato evil. In another way, they can be taken as categoricals, namely, to the effect that Socra-

tes wishes that things be as is signified by the expression 'May Plato be visited with evil, if he wishes Socrates evil'.

And then when it is asked whether Socrates wishes Plato evil, I say that he does, with a conditional wish, but not with an absolute wish.

And so, leaving curses behind, may God who is blessed in eternity bless us. Amen. And this is the end.

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Indexes

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Index of Authors and works referred to by Buridan

Anonymous: *Liber De Sex Principiis,* 193, 199
Aristotle: *Categories,* 25, 143, 147, 148, 158, 159, 162, 166, 169, 170, 174, 176, 180, 184, 187, 189, 191, 192, 197, 199, 206, 211, 212, 215, 217, 257, 465, 466, 475, 539, 559, 649, 677, 690, 787, 832, 851, 860, 938, 944, 956; *Ethics,* 6, 138, 148, 199, 256, 491, 497, 562, 624, 698, 706, 707, 718, 719, 744, 747, 752, 753, 776, 803, 804, 990; *Metaphysics,* 6, 12, 39, 59, 79, 110, 124, 128, 136, 137, 154, 160, 163, 164, 166, 169, 170, 171, 177, 191, 193, 197, 199, 207, 211, 213, 217, 218, 253, 289, 292, 346, 396, 416, 427, 428, 430, 431, 440, 441, 464, 465, 498, 582, 603, 622, 623, 625, 626, 627, 633, 644, 645, 647, 651, 668, 669, 671, 677–679, 696, 699, 704, 705, 708, 712, 715, 717, 719, 721, 728–730, 732, 744, 747, 750, 769, 770, 779, 780, 782, 785, 787, 798, 801, 815, 827, 828, 832, 846, 852, 860, 893, 962; *Meteorology,* 260, 430, 774; *On Generation and Corruption,* 214, 915, 920; *On Interpretation,* 11, 15, 17–19, 21, 24, 59, 74, 222, 225, 233, 243, 441, 507, 522, 584, 824, 828, 832, 944, 994; *On Sophistical Refutations,* 7, 59, 296, 496, 497, 499, 501, 505, 507, 509, 517, 523, 526, 546, 547, 549, 550–552, 559, 561, 564, 565, 567, 568, 571, 577, 579, 580, 587, 590, 596, 600, 602, 604, 607, 750; *On the Heavens,* 75, 582, 684, 733, 734, 774; *On the Soul,* 9, 136, 222, 407, 431, 510, 651, 652, 658, 663, 686, 690, 704, 705, 720, 721; *Physics,* 7, 135, 165, 167, 170, 171, 180, 186, 197, 199–201, 207, 208, 213, 214, 217, 261, 396, 401, 440, 443, 445, 449, 450, 452, 502–505, 571, 583, 627, 638, 657, 659, 660, 675, 686, 693, 729, 730, 737, 765, 770, 774, 780, 781, 782, 785, 787, 803, 847, 852, 876, 885, 941, 942, 949, 963; *Politics,* 3; *Posterior Analytics,* 40, 79, 169, 260, 308, 365, 396, 500, 550, 551, 571, 572, 623, 641, 642, 644, 656, 665, 670, 673, 675, 676, 679, 680, 681, 684, 688, 689, 692, 696, 697, 702, 705, 706, 710, 711, 716–718, 720, 726–729, 735, 736, 737, 746–748, 757, 759, 762–764, 773, 775, 777, 780, 785, 786, 791, 792, 797, 799, 800, 803, 805, 806, 808, 815, 818, 855, 872, 897; *Prior Analytics,* 74, 126, 149, 154, 239, 245, 297, 306, 309, 312, 322, 339, 353, 359, 376, 377, 380, 383, 384, 399, 521, 553, 571, 572, 657, 698, 742, 743, 818, 934, 954, 955; *Rhetoric,* 481, 499, 752; *Topics,* 3, 103, 110, 130–132, 189, 416, 463, 464, 466, 473, 474, 477, 481, 482, 554, 571–573, 632, 635, 669, 670, 695
Averroes: *Aristotelis Metaphysicorum Libri XIII cum Averrois Commentariis,* 137, 166, 295, 396, 399, 699, 708, 721, 787
Boethius: *De Divisionibus,* 427, 621, 622; *De Topicis Differentiis,* 391–393, 397, 402–406, 421, 427, 428, 432, 435, 439, 458, 480, 481, 487, 490, 491; *In Librum Peri Hermeneias Aristotelis,* 847
Buridan: *Expositio in De Anima,* 9, 651; *Quaestiones in Aristotelis Metaphysicam,* 6, 22, 25, 115, 120, 124, 136, 411, 440, 464, 465, 560, 622, 633, 634, 669, 723, 750; *Quaestiones in De Anima,* 8, 446, 651, 662, *Quaestiones in Predicamenta,* 200, 786, 880; *Quaestiones in Primum Librum Analyticorum Posteriorum,* 967; *Quaestiones Longe Super Librum Perihermeneias,* 16, 28, 81, 241, 584, 637, 638; *Quaestiones Super Octo Physicorum Libros Aristotelis,* 104, 136, 200, 213, 447, 451, 452, 454, 627, 660, 786, 852, 942, 963; *Questiones Elencorum,* 533; *Summulae De Dialectica:* 866, *Tr. 1,* 91, 92, 103, 209, 229, 236, 244, 270, 339, 458, 470, 553, 558, 842, 960, 982, *Tr. 2,* 108, 916, *Tr. 3,* 4, 108, 114, 115, 206, 257, 460, 461, 464, 466, 467, 468, 621, 622, 734, 809, 833, *Tr. 4,* 16, 26, 52, 66, 127, 129, 181, 202, 234,

Buridan (*continued*)
243, 263, 265, 336, 348, 366, 470, 507, 636, 637, 638, 680, 709, 725, 867, 868, 873, 879, 910, 912, 914, 979, *Tr. 5,* 361, 363, 374, 495, 521, 579, 674, 724, 736, 741, 742, 784, 886, *Tr. 6,* 68, 132, 505, 555, 556, 580, 608, 622, 636, 696, 701, 723, 724, 784, 886, 917, *Tr. 7,* 68, 98, 370, 495, 514, 608, 630, 886, 943, *Tr. 8,* 69, 92, 125, 235, 238, 380, 385, 412, 414, 417, 448, 474, 551, 572, 576, 579, 601, 634, 656, 672, 679, 680, 683, 710, 718, 734, 739, 750, 756, 763, 782, 787, 792, 793, 797, 798, 808, 811, 813, 833, 840; *Sophismata,* 54, 56, 62, 66, 69, 90, 213, 216, 255, 259, 267, 268, 272, 273, 279, 294, 296, 348, 370, 442, 450, 454, 465, 468, 551, 557, 559, 560, 561, 602, 615, 637, 638, 677, 689, 692, 703, 793, 809, 816, 841, 844, 853, 857, 862, 955, 956, 957, 965, 967, 968, 969, 970, 978; *Tractatus De Consequentiis,* 56, 873
Donatus: *Ars Grammatica,* 636
Grosseteste, R.: *Commentarius in Posteriorum Analyticorum Libros,* 666, 705
Peter of Spain: *Tractatus/Summulae Logicales:* 4, 9, 67, 105, 108, 426
Porphyry: *Isagoge,* 92, 103, 104, 108, 115, 116, 123, 129, 130, 132–134, 138, 139, 177, 193, 289, 416, 627, 628, 639, 640, 744, 746, 876, 886, 932
Sacrobosco, J.: *On The Sphere,* 684, 774
Themistius: 404, 405, 457, 458, 459, 472, 477
Tullius: 404, 405, 456, 459

Index of Subjects

A casibus (from cases), 485, 488. See also *locus*
A coniugatis (from the conjugates), 485, 486, 488, 504. See also *locus*
A posse esse ad esse, 444
A posteriori, 64, 572, 657, 756, 772, 778, 794, 816
A priori, 576, 756, 778
Able to laugh (property of man), 125, 125*n28,* 126–127, 139, 349*n35,* 731, 734. *See also* risible (property of man)
Abstraction, 720, 723
Acceptio, 860
Accident, 106, 108, 109, 111, 122, 123, 126, 135, 136–138, 291–293, 365, 411, 550, 621–623, 627, 628, 640; categories of, 149, 153, 155, 156, 257, 265; definitions of, 128–133; division of, 132, 133; inseparable vs. separable, 122, 133; taken in two ways, 128–130
Action and passion, liv, 143, 151, 193, 198, 205, 212, 484, 885
Ad aliquid, 172, 172*n45,* 177–181, 192, 198, 207, 213, 890, 892. *See also* relation
Ad impossibile/reductio ad impossibile, 368, 664. *See also* syllogism: *ad impossibile*
Ad extra vs. *apud mentem* (outside vs. inside the mind), xl–xli, 13, 825, 849, 850, 895
Ad placitum (signification by convention), xxxvi*n24,* xli*n35,* xlvi, 5, 12, 14–15, 69, 89, 90, 152, 221–223, 228, 229, 236, 253, 261, 262, 310, 377, 404, 406, 438, 506–507, 516, 522, 540, 542, 547, 578, 606, 637, 666–669, 671, 704, 741, 750, 753, 824, 838, 849, 859, 867, 929, 930, 948, 996
Adesse et abesse, 128–129, 143, 188, 209
Adhaesiva, 705–706, 738, 739. *See also* demonstration
Adiacentia/adiacens, 67, 226, 227, 291, 297, 642, 644, 649, 661, 835, 880
Adjectival name, 16, 236*n23,* 265. *See also* name
Adjectival determination, 648
Adjectival sensation, 657
Adjectival thought (*intellectio*), 651
Affection (*passio*), 233, 522, 824, 832
Alietas, 165
Ambiguity (*multiplicitas*), 34*n69,* 145*n3,* 510, 603; actual/imaginary/potential, 510, 511
Amphibolia, 510, 569, 593, 604; definition of, 516
Ampliation: ampliative contexts (verbs, participles, adverbs, modalities), xxxiv, xlv, xlv*n41,* 52, 55, 96, 221, 292–294, 298–301, 339–340, 348, 351, 374, 437, 521, 545, 557, 842, 853, 861, 866, 888, 914, 916, 918, 920, 922, 923, 926, 928, 929, 947; ampliative terms, 326, 327, 354, 356, 947, 948; blocked by the phrase 'that is', 53, 327, 342, 345, 348, 351, 352, 355, 356, 917, 920, 921, 924, 927, 928, 928*n138;* conversion and ampliation, 85; 'necessary' ampliates, 299–300, 357
Analogy, 872, 875
Analogy by attribution, 12*n27,* 224*n3,* 224–225, 520–521, 683*n132*
Anaphora, 267; and appellation, 905
Antecedent: the antecedent of a valid consequence can be true while its consequent cannot be true, 953, 954; the contradictory of the antecedent follows

from the contradictory of the consequent, 87, 576; definition of, 61–62, 64; fallacy of, 578; insufficient, 578; a possible antecedent cannot entail an impossible consequent, 385; not properly the cause of the consequent, but its knowledge is the cause of the knowledge of the consequent, 64; in a syllogism it is a conjunction of the two premises, 323; whatever does not follow from the antecedent does not follow from the consequent, 359
Antichrist (in examples), 52, 53, 72, 84, 86, 96, 181, 293, 299, 437–439, 449, 557–558, 829, 830, 835, 844, 850, 855, 867, 877, 878, 917–919, 925, 926, 928, 946, 947
Appellation: alienation of, 299, 302; of concepts (*appellatio rationis*), li–liii, 291, 294–297, 905*n105*, 909; discussed, xxxiv, l–li, l*n53*, 29, 145–147, 147*n9*, 221, 291–293; 348, 539, 544, 545, 547, 661, 824, 876, 879, 881–882, 886–887, 890, 895, 899, 903, 904, 919; distinguished from supposition, 226; positive vs. privative, 879; predicate appellates its form, 882; removal of, 228; restricted, 545; specific difference has no appellation, 227; theory of, 146*n8*. *See also* connotation
Appellationes dicti, 254*n55*
Appellative. *See* term
Appropriation, 684, 763, 798, 805
Argument: definition of, 392; dialectical argument distinguished from demonstration, 694, 695, 697–703; dialectical vs. sophistic, 455, 457, 474, 480, 495–497, 501, 504–506, 509, 561–562, 565–566, 595–596, 603, 664, 696, 700, 701, 705, 707, 710, 724; distinguished from conditional proposition, 575
Argumentation: as distinct from argument, 392; four species of, 393–397
Assertoric (*de inesse*), xlv, 23, 29*n62*, 89, 339–341, 346, 758. *See also* proposition
Assertoric verb, 339
Attribute: 'attribute' vs. 'subject', 128, 179, 647, 661, 662, 673, 674, 677, 684, 685, 727, 728, 730, 732; three kinds of, 654, 655
Attribution, 159, 683, 683*n132*, 686
Attributive locution, 452. *See also* analogy
Axiom (*dignitas*), 349*n36*, 677, 681, 684

Being: 'being' and 'one' are convertible, 828; being in (*inesse*), 403, 403*n13*, 405, 438; being in by inherence, 129; beings of reason (*entia rationis*), lxi; modes of being in, 472, 478, 480; predicated equivocally of the categories, 108; *secundum quid* and *simpliciter*, 557; signification of, 846; as true, 860. *See also* copula; *inesse;* inherence

Category: aggregate of most general genus and the predicables under it, 151; categories are distinguished on the basis of different modes of predication, 130, 192, 204, 880; most general genus, 151, 189, 205; terms in one category do not belong to another, 892
Casus, 145–147, 145*n3*
Causa apparentiae (cause of illusion). *See* fallacy
Causa inhaerentiae (cause of inherence), 808, 816
Causa nonexistentiae (cause of defectiveness). *See* fallacy
Causae veritatis. See causes of truth
Causal definition. *See* definition
Causal proposition. *See* proposition
Cause and effect: efficient, 441, 443, 448, 448*n64*, 504, 640*n43*, 656, 657, 659, 668, 669, 766, 769, 780; final, 446–448, 453, 640*n43*, 656, 657, 659, 668, 766, 769, 780; formal, 445, 487, 640*n43*, 656, 657, 659, 668, 766, 769, 770; material, 425, 426, 444, 504, 640*n43*, 656, 657, 659, 668, 669, 752, 765, 769
Cause of defectiveness (*causa nonexistentiae/defectus*): definition of, 495; discussed, 504, 509, 515–517, 524, 525, 532–534, 548, 550, 554–555, 563, 566, 570, 571, 574, 576, 580–581, 583, 586–587, 595–596. *See also* fallacy
Cause of illusion (*causa apparentiae*): definition of, 495; discussed, 504, 506, 508–509, 515–516, 524–525, 532–534, 548, 550, 554–555, 563, 566, 570–571, 574, 576, 580–581, 586–587, 595–596. *See also* fallacy
Causes of truth (*causae veritatis*), 56, 56*n85*, 63, 90, 312, 381–382, 387, 468, 470, 578, 856, 859
Change, 945, 950, 951
Chimera (in examples), xlv*n42*, lvii, 47, 48, 55, 74, 154, 211, 222–224, 226–228, 236, 238, 243, 248, 557, 567, 591–593, 629, 630, 637, 638, 642, 731, 735, 785, 786, 796, 826, 827–829, 834, 838, 839, 843, 847, 861, 868, 912, 918

Coming to be absolutely vs. in some respect (*fieri simpliciter* vs. *secundum quid*), 195
Common axioms (*communes dignitates*), 798. *See also* axiom
Common sense (*sensus communis*), 652
Communiter accidentia (concurrent accidents), 454–455. See also *locus*
Complete division. *See* division
Complexe significabile (complexly significable), xlviii, xlviii*n49,* lxi, 829, 829*n5,* 830, 843, 844*n28*
Complexio (combination of concepts). *See* concept
Complexio distans (propositional combination), 669
Complexio indistans (non-propositional combination), 302
Complexity, semantic vs. syntactic, xxxviii–xli
Composition, definition, 616
Compositionality, xxxvii
Concept: abstract vs. concrete, 147*n9;* accidental, 136, 652; adjectival, xxxix*n31;* analogical, 785; appellation of (*see* appellation); appellative, 904, 910; categorematic, xxxviii*n27,* xl*n33,* xlii, 22, 235, 651, 842; combination (*complexio*) of, 11, 24, 148, 266, 302; common, 667, 720, 723, 725, 751, 752, 775, 803; complex, xxxvii–xlii, 234–236, 238, 636, 637, 646, 651, 652, 661, 680, 835, 836, 837, 838, 840, 896, 982; complexive, xxxix–xliii, xlvi, 14, 22, 24, 234, 234*nn17–18,* 261, 842, 843, 936, 982; connotative, xlix; discussed, xxxv, xlii, 13, 621, 895, 982; incomplex, 234–235, 646, 650, 651, 837; individual concept, 652; mental, 521, 538; numerical, 620; purely syncategorematic, xlvi, 18, 19, 235, 261; relative vs. absolute, 173; and signification, 223; simple, xxxvii–xxxix, xlii, 11, 13–14, 22, 24, 234*n18,* 235, 238, 636, 835, 838, 840, 842, 896; singular, 723, 751, 720; substantial, 136, 143, 652, 662; substantive, 661; syncategorematic, xl–xlii, 235; universal, xxxviii*n27,* liii, 254. *See also* intention; *ratio*
Conclusion, 398, 677, 899; affirmative vs. negative, 743; definition of, 393; necessary vs. contingent, 746; universal vs. particular/indefinite, 743
Concrete. *See* concept; term
Concurrent accidents (*communiter accidentia*). *See* dialectical *loci*
Coniugationes inutiles (useless combinations), 327
Coniunctio (connective), 236, 574, 944
Connotation, xxxviii*n27,* xlvii, li, 15, 52*n80,* 123, 127, 128, 146*n7,* 147*n9,* 151, 153, 160, 175, 185, 192, 234, 641, 645, 728, 965
Connotative. *See* concept; term
Consequence: converse (*e converso*), 469–470; by conversion, 309, 397; direct (*in ipso*), 468–469; enthymematic, 549; by equipollence, 309, 397; from the exponents to what is expounded, 309, 416, 919, 933; formal, 42, 49, 264, 309, 397, 875; a hypothetical proposition, 715; inductive, 549; material, 49; necessary, 455, 691; by subalternation, 309, 397; syllogistic, 307, 578; true vs. false, 574, 575, 608; *ut nunc* vs. *simplex* (as of now vs. simple), 62, 62*n95;* valid consequence defined, 955; valid consequence is necessary, 959
Consequent: definition of, 61–62, 64; the opposite of the consequent does not entail the opposite of the antecedent, 955; the opposite of the consequent entails the opposite of the antecedent, 383, 952; whatever follows from the consequent follows from the antecedent, 51, 322–324, 338, 345, 350, 351, 373, 377, 819
Consignification, lviii, 18, 844, 921, 945, 977
Constancy of terms (*constantia terminorum*), 40, 48, 55, 123, 123*n24,* 130, 185, 337, 429, 443, 465, 470, 471, 474, 490, 733
Context (*circumstantia*), 857, 857*n48*
Contingent matter, 39–41, 78. *See also* proposition: matter of
Contradiction: discussed, 564–566, 569, 595, 597, 603, 608, 717; is an opposition that does not have an intermediate, 39*n73,* 79, 467; rule of, 938
Contradiction in terms, 212
Contradictories: discussed, 29, 36–38, 44–47, 704, 785, 859, 893, 938, 943; law of, 41, 238, 826, 856; locus of, 826; of modals, 77–83, 85–86, 337, 386–387, 404, 460, 462, 463, 467–469, 490, 576, 979. *See also* proposition: contradictory of
Contradictory opposition, 206, 208, 212. *See also* opposition
Contraposition. *See* conversion
Contraries: discussed, 36–39, 41, 44–47, 77–

83, 100, 160–163, 170, 177, 190, 198, 207, 386–387, 405, 460, 463, 465–471, 482–483, 491, 580, 782, 893, 952; law of, 41, 77, 81, 239, 244, 873; intermediate (*medium*) of, 39, 39*n73*
Contrariety: modes of, 208, 209; of propositions is taken in two ways, 209; in the strictest sense, 161; of terms in the strictest sense, 208; two conditions of, 161
Conventional signification. See *ad placitum*
Conversion: absolute, 380; accidental, 48, 51, 380; by contraposition, 48, 55, 470; discussed, 48–51, 84–88, 179, 241, 246–247, 919; formal, 49, 54; mental, 538; simple, 50, 328–330, 333, 334
Copula: affirmative, 11*n22,* 14*n28,* 235; ampliative, 294; complex, 31, 72*n110,* 73, 99; a complexive concept, xl, xl*n32;* consignifies composition, 18; consignifies time, 19, 242–243, 269, 274; discussed, xl–xlviii, 12, 14, 18–19, 22, 26, 28–30, 32, 70–71, 98, 526, 585, 636, 878, 888, 889, 936, 960; formal part of a proposition, xliv, 40, 242; implicit or explicit, 193; implied by verbs, 18–19, 51, 624; 'is' as the copula vs. as an absolute predicate (*est tertio* vs. *secundo adiacens*), 23, 28, 242, 378, 429, 430, 431, 445, 666*n43,* 667, 667*n97,* 668, 669, 677, 863; mental, xlvi, 261; modal, 31, 335; negative, 11*n22,* 35, 235; signifies identity, xliii*n37,* 855; signifying nothing externally, 842; the verb 'belongs' (*inest*) as a copula, 365, 642
Corruption, 212–213, 440, 446, 449–453, 580, 582, 619, 915, 920
Counterinstance (*instantia*), 14, 250, 326, 338–339, 342, 345–346, 353–358, 362–363, 742, 789
Creation, is the thing created, 194
Curses, absolute vs. conditional, 996

De contingenti (about contingency). *See* proposition: categorical: modal
De esse ad esse/fuisse, 444, 790
De esse secundo adiacente ('is' as an absolute predicate), 665, 669, 671, 672, 790, 817, 819. *See also* copula
De esse tertio adiacente ('is' as the copula), 665, 666, 671, 672, 790, 817, 819. *See also* copula
De facto esse ad facto esse, 789–790
De futuro (about the future), 31, 465, 668, 823.
De inesse (about actuality), xlv, 29*n62,* 31, 68, 296, 340, 346, 351–356, 359, 465, 668, 696. *See also* proposition: assertoric
De inesse simpliciter vs. *ut nunc* (about actuality absolutely vs. as of now), 353–354, 359
De modo. See proposition: modal
De Morgan's Law, 63*n97,* 938*n144*
De necessario (about necessity), 296, 299, 336, 351. *See also* proposition: modal
De posse esse ad posse, 789–790
De possibili (about possibility), 31, 296, 299, 465, 668, 696. *See also* proposition: modal
De praesenti (about the present), 23, 31, 465, 668, 823, 854
De praeterito (about the past), 31, 465, 668, 823
De proprietate/virtute sermonis (in the proper/strict sense), 7, 15, 23, 35, 43, 71, 86, 91, 105, 129, 155, 171, 191, 214, 306, 339, 394, 397, 401, 415, 432, 437, 438, 440, 442, 448*n64,* 452, 456, 475, 476, 481, 489, 495, 501, 506, 519, 520, 586, 587, 590, 606, 617, 630, 635, 636, 640, 645, 646, 648, 657, 666, 671, 682, 703, 706, 720, 725, 729, 738–740, 746, 748, 749, 753, 757, 760, 762, 767, 769–771, 780, 785–787, 788*n332,* 792–794, 796, 797, 799, 801, 811, 816, 818, 840, 851, 869, 885, 888, 907, 919, 932, 934, 957, 960, 964, 968, 994; strictest sense, 39, 664, 739, 759, 764
De vero et falso (about truth and falsity), 336. *See also* proposition: modal
De virtute sermonis (in the proper/strict sense). See *de proprietate/virtute sermonis*
Definiens (a phrase defining a term), 179, 182
Definition: causal, 125, 412, 631, 635, 640, 655–659, 672, 673, 677, 730, 732, 762, 771, 840; composite, 663; descriptive, 631, 635; discussed, 155, 169*n38,* 401, 406–407, 410–412, 414–417, 423, 601, 631, 634, 740, 847; division of, 635; formal, 659; *loci* from, 407–409, 413, 414–415, 416–417; nominal (*definitio dicens quid nominis*), lx, 98, 125, 175, 193, 235, 238, 309, 404, 839; nominal vs. quidditative, 840; purely quidditative, 643, 645, 672; quidditative (*definitio quidditativa*), 125, 631, 634*n28,* 635, 636, 638–646, 651, 656, 658, 659, 677,

Definition (*continued*)
679, 731, 762, 770, 811, 817, 840; *ratio,* 155, 622
Definitum (the term defined), 127, 131–132, 401, 406–407, 409, 412, 414–416, 423, 601, 631, 632, 634, 641, 643, 645, 646, 655, 673, 731, 732, 734, 764, 801, 815, 847
Demonstration (*demonstratio*): affirmative vs. negative, 742, 806, 873; as of now, 750; categorical vs. hypothetical, 740, 741, 819; definition of, 739; discussed, 410, 498, 572, 609; doctrinal vs. non-doctrinal, 749, 750, 787, 792, 793; enduring (*mansiva*), 738, 748–750, 787, 792, 793; indirect (*ad impossibilite*), 741, 742, 762, 783, 784, 807; is a syllogism producing knowledge, 657, 660, 663, 696, 697, 738–741, 748, 782, 802; matter of, 673; modal, 748, 783; necessary/contingent, 635; negative, 742, 783, 785, 806; ostensive, 385, 741, 742, 762, 785; principles of, 663, 807; *propter quid* vs. *quia,* 753–754, 773–774, 777–779; prudential, 718; purely categorical, 742; simple vs. composite, 715; theory of, 615*n1;* universal vs. particular, 746, 802
Denominative genera and species: may overlap, 626. *See also* category; *genus; species*
Denominative vs. quidditative predication, lx*n74. See also* predication
Denominatives, 145–148
Description: definition of, 413, 659; discussed, 406–407, 411, 414–415, 417, 631, 640, 660, 840, 847; *loci* from, 407, 417, 414
Designate, xxxiv, xli, xliii, 11, 11*n23,* 13–14, 16, 19, 50, 65–66, 86, 116, 130, 232, 234, 321, 324, 341, 344, 345, 371, 574, 637, 729, 732, 760, 931, 932, 936
Determination (and determinable), 67–69, 89, 138, 245, 250–251, 267, 637, 721
Dialectic (*dialectica*), 3–7, 498
Dialectical *loci* (*loci dialectici*): described, 400; extrinsic, 400, 404–407, 434, 459–460, 472, 477, 480, 485, 490–491; intermediate, 400, 402–406, 407, 472, 485, 487; intrinsic, 400, 402–406, 472, 477–480, 485, 487; reduced to syllogisms, 398–399, 423; vs. sophistic *loci,* 565–566. See also *locus*
Dici de nullo (being predicated of nothing), 305–307, 322, 326, 341, 343, 345, 356, 361, 364, 370, 736, 800
Dici de omni (being predicated of everything), 305–307, 322, 325, 340, 341, 343, 344, 345, 348, 356, 361, 363, 364, 370, 372, 518, 664, 724–726, 736, 737, 800
Dictio (word): definition of, 228–229; discussed, 148, 222, 225, 227*n7,* 915, 917; division of, 232–233
Dictum: in composite modals, 88–89, 336–337; conversion of, 96; discussed, ixlvii–xlviii, 77–84, 481, 526, 561, 886, 897; quantity of, 76, 76*n116,* 244
Difference, 106, 108, 121–123, 335, 622, 638, 640; defined, 123
'Different' and 'same', four senses of, 109–113
Dignitas. See axiom
Directly concluding syllogism, 307. *See also* syllogism
Disjunctive proposition. *See* proposition
Disjunctive term. *See* term
Disparate terms, 482–483, 492. *See also* term
Disparity, 79, 207, 434, 462
Disposition (*dispositio*), 137, 147, 184, 187, 192*n72,* 194, 399, 411, 447, 451, 452, 462, 640, 642, 644, 647, 653, 654, 732; extrinsic (*aliena*), 226, 227, 639, 669
Disputation, 7, 495; definition and division of, 498–501; demonstrative (doctrinal), 584, 596, 609; sophistical vs. dialectical, 573, 584
Distribution, 32, 42, 46, 50, 77, 92, 93, 106, 235, 264–273, 333, 341, 345, 353, 354, 367, 424–425, 439, 457, 544–545, 567, 788, 886, 887, 926
Distributive sign: as cause of confusion, 264–269; discussed, 249, 231, 234, 268, 883, 922
Divided modals, 335. *See also* proposition: modal
Divine persons, 326, 917*n131;* providing counterinstances to syllogisms, 327
Division, 485, 489, 615; complete/incomplete, 623; definition of, 616, 617; theory of, 615, 615*n1*
Doctrinal demonstration. *See* demonstration

E contrario, 468–469
Eclipse (in examples), 264, 268, 451, 455, 668, 669, 680, 725, 733, 740, 741, 747, 749, 755–757, 760, 773, 774, 785, 786, 789, 790, 797, 809, 810, 816–818, 912
Elenchus: definition of, 495; discussed, 564–565, 603

Enduring demonstration (*demonstratio mansiva*). *See* demonstration
Enduring knowledge (*scientia mansiva*), 732, 739, 740, 749, 750, 817, 817*n383*
Enthymeme: definition of, 397; discussed or mentioned, 309, 393, 695, 952
Entia rationis (beings of reason), lxi
Enunciation: definition of, 393; discussed, 17, 19–22, 209, 983
Enuntiabilia, xlviii*n49,* lxi, 254*n55,* 844*n28.* See also *complexe significabile*
Equivocation: definition of, 143–144; discussed, 150, 143–144, 516, 569, 593, 604; not in mental language, 145; of the verb 'belong', 365. *See also* fallacy: of equivocation; *inesse*
Esse in subiecto (being in a subject): means being predicated denominatively, 156. See also *inesse;* inherence; predication
Essential signification. *See* signification
Estimative power. See *virtus aestimativa*
Ex hypothesi (by the hypothesis), 354
Ex institutione (by convention), 11. See also *ad placitum*
Example (in *Topics*): definition of, 394; discussed, 393–395, 397–398, 400, 695, 855
Experience, 710, 720, 722–724, 774
Exponent (*exponens*), 53, 53*n83,* 54, 273, 309, 416–418, 578, 919, 933
Exponibilia, 53*n83,* 308*n7,* 417*n29,* 578*n122*
Exposition, 113, 121, 126, 404–405, 413–415, 609, 636, 666, 762, 771, 773*n301*
Expositum, 416–418
Expression (*oratio*): complete, 20, 236, 237; complex, xli*n35,* 200, 235; definition of, 20–21, 227*n7,* 228; discussed: 11, 14, 16, 148, 166, 222, 225, 236, 238, 393, 411, 412, 632, 647, 934, 935; hypothetical, 65, 308; imperative, 20; incomplete, 20, 236, 237, 964, 965; indicative, 20; infinitive (see *orationes infinitivi modi*); material identity of, 524–525, 532–535, 538; mental, 11–14, 522; optative, 20; significative, 12, 16; vocal (*elocutio*), 392

Fallacies apart from words (*extra dictionem*) vs. of words (*in dictione*), 334, 506, 508, 509, 512, 515, 521, 522, 534, 538, 539, 546–549, 555, 564–566, 568, 585, 593
Fallacy: of accent, 511–512, 515, 532–533, 605; of accident, 508, 513, 521, 532, 538, 546–548, 550–551, 577–579, 595, 603, 607; of amphiboly, 510–519, 538, 546, 568, 594, 603, 605; of antecedent, 578; of composition and division, 510–511, 515, 524–525, 528–529, 531, 605, 630, 907; definition of, 504–506; number of fallacies, 595–596; of equivocation, 508, 510–511, 515–519, 521, 538, 540, 546, 568, 594, 603, 605; of figure of words (*figura dictionis*), 510–512, 515, 534–535, 538–539, 544, 555, 599–600, 606; of *ignorantia elenchi,* 513–514, 563, 566, 579, 593, 595, 597, 599, 603; of many questions as one, 513–514, 584, 610; of non-cause as cause, 513–514, 579, 583, 595, 598, 599, 610; of *petitio principii* (begging the question), 513–514, 570–571, 595, 598, 603, 609; of the consequent, 99, 513–514, 573–578, 596, 609; on account of synonymy, 568; *secundum quid et simpliciter,* 68, 513–515, 554–559, 562, 568, 576–577, 596, 600–601, 607–608, 891
Fictive terms. *See* term: fictive
Fieri simpliciter vs. *secundum quid. See* coming to be absolutely vs. in some respect
Figure (syllogistic): definition of, 310; first, 315; problem of fourth figure, 311; second, 316; third, 316–317. *See also* syllogism
Finite name, 11, 15. *See also* name
First proposition, 216, 630, 656, 703, 715, 736; nominal definition of, 702
Future contingents, 62, 993

Generation, 212, 213, 420, 440, 449–452, 580, 920; *secundum quid* vs. *simpliciter,* 198 (*see also* coming to be absolutely vs. in some respect); subjectively vs. terminatively, 198
Genus: defined, 107; division of genus into species can be overlapping, 624–626; *generalissimum* (most general genus), 107, 114–115, 117–118, 131, 136, 151, 159, 172, 173, 189, 209, 865; genus is a predicable whole of its species, 626–628; genus is not a collection, 617*n3; subalternum* (subaltern genus), 107, 114–115, 131; taken in two ways, 678–679
God (in examples), xli, xlvi, 13, 14*n28,* 63, 65, 81, 85–87, 89, 90, 98–100, 106, 114, 133, 137, 146, 162, 175, 207, 223, 234, 258, 261, 295, 300, 342, 345, 348, 351, 355–358, 360, 362, 363, 447, 456, 470, 558, 560, 561, 660, 665, 667, 698*n165,* 707–709, 729, 731–733,

God (in examples) (*continued*)
735, 818, 819, 825, 826, 829, 830, 841–845, 850, 851, 863, 867, 868, 884, 885, 899, 917, 919, 930, 933, 937, 953, 960, 970, 971, 976, 977, 980, 993
Grades of perseity, 731–733
Grammatica positiva vs. *regularis* (positive vs. normative grammar), 6
Grammatical modes of signification, 16, 137, 607, 649, 669. *See also* signification
Grammatical signification, 521
Gratia materiae (valid on account of its matter), 49. *See also* consequence: material

Habitudo (relation): discussed, 401–402, 410, 880; *habitudo localis,* 433; *habitudo media,* 403
Habitus (habit), 151, 184–186, 187, 192*n72,* 199, 204, 205, 218, 472, 497, 675, 675*n112,* 686, 706, 717, 720
Hoc aliquid (this something), 159, 204–205, 539, 644
Hoc est propter illud (this is because of that), 756, 758. *See also* sign of causality
Holy Trinity, 698, 917
Hypothetical. *See* proposition: hypothetical
Hypothetical extremity, 742

Identity theory of predication. *See* predication
Ignorantia elenchi. See fallacy
Implicat virtualiter (virtually implies), 969
Imposition, 16, 116, 120, 121, 144, 147, 223, 255, 377, 405, 410, 415, 428, 440, 547, 838, 890, 891, 896, 939, 948
Impotentia (impotency), 185
Improper locution, 198, 256, 451, 656, 659, 919, 967
In dictione (in words). *See* fallacy
In eo quid quod est, 864. See also *in quid;* predication: essential
In ipso (directly), 468–469. *See also* consequence: direct
In principio (in the beginning or in the principle), 571. *See also* fallacy: of *petitio principii*
In proportione (analogically), 694
In quale: predication in the category of quality, 106–108, 113, 123, 131, 137–138, 183, 190, 640; predication in the category of quality as opposed to the predication of specific difference (*in quale accidentale* vs. *essentiale*), 641, 641*n44*
In quando, predication in the category of time, 107, 108, 113
In quantum, predication in the category of quantity, 107, 108, 113, 131, 166
In quid, predication in the category of substance, 106–110, 113, 115, 117, 123, 131, 137, 138, 411, 640, 641, 644
In quot, predication in the genus of discrete quantity, 107, 108, 113
In ubi, predication in the category of place, 107, 108, 113
Incompossibiles, 784
Indemonstrable principles of demonstration: discussed, 399, 572, 664, 671, 677, 683, 684, 690, 698, 706, 710–716, 718, 719, 744, 763, 764, 774, 782, 810, 815; their cognition is not innate, but acquired from experience by induction, 395–397, 721–723. *See also* demonstration; induction
Indirect demonstration. *See* demonstration
Indistant combination (*complexio indistans*), 302, 302*n96. See also* concept: combination (*complexio*) of
Individual, a name of second intention meaning singular term, 116, 120, 149, 156
Induction: definition of, 393, 395; discussed, 64, 171, 204, 249, 279, 679, 695, 720, 724, 855, 857, 858, 871, 878, 888, 902, 910, 915, 916, 947, 966; not necessary on account of its form, 309, 399
Inesse (being in), 31, 105, 129, 130, 209, 346, 353, 365, 473, 789, 795, 798, 809. *See also* inherence
Infima species (lowest species), 117
Infinite, expounded, 713
Infinite name, 15–18. *See also* name
Infinitize, xliii, 28, 35, 91, 92, 230, 250, 269, 271, 291, 531, 592, 923. *See also* negation; term: infinite
Inherence: being in (*inesse*), in the sense of true, affirmative predication, 105, 129, 130; being in a subject means being predicated denominatively, 156; discussed, lvii–lviii, 29, 29*n62,* 30, 129, 131, 145, 365, 473*n101,* 477, 487, 619, 667, 681, 682, 813; 'inherence theory' of predication (*see* predication); real, 209
Insolubles (*insolubilia*), lvii*n67,* 849, 855, 857, 858, 862, 952
Instant, no indivisible instant, 941, 946, 950, 951
Instantia (counterinstance), 326

Institutio (stipulation, convention), 10, 11
Integral part, 5, 15, 26, 29, 56, 265, 377, 420, 428–430, 440, 457–458, 489, 555, 617
Integral whole, 403, 405, 420–421, 426, 428–431, 440, 489, 555, 617–620, 624
Intention (*imaginatio*), 9
Intention (*intentio,* concept): discussed or mentioned, 146–147, 555–556, 585, 734, 786, 802, 832, 936, 949, 971, 972, 979; *intentio attributiva* (analogical concept), 785; *intentio prima* vs. *secunda* (first vs. second intentions), 120, 423, 428, 440, 968, 968*n182. See also* concept; *ratio*
Intermediate science, 776
Interpretation: definition of, 414, 635; discussed or mentioned, 406, 411–412, 415; *loci* from, 407, 414, 417; of the name (*interpretatio nominis*), 697
Interrogative sign, 584, 586

Judgment: of experience (*iudicium experimentale*), 722; of memory (*iudicium memorativum*), 722; sensory (*sensitivum iudicium*), 705, 722

Knowable proposition, 703, 704
Knowable questions (*quaestiones scibiles*), 664, 665, 670, 676
Knowledge (*scientia*): description of, 688; four modes or senses distinguished, 705–706, 718–719; knowledge and opinion, 703–707, 710; knowledge of a conclusion, 670, 673, 676, 691–694, 698–701, 720, 738–740, 767; knowledge of consequence, 700; propositional vs. non-propositional, 982–983; three types of, 738–739

Locus: definition of, 400; division of, 400–402; *locus differentia maximae* vs. *locus maxima* (*locus* that is a difference of the maxim vs. *locus* that is a maxim), 400–405, 412, 414–415
Lowest species (*infima species*), 117

Major extremity: definition of, 310; discussed or mentioned: 314, 315, 317–319, 324, 325, 329, 330, 332, 333, 336, 337, 353, 362, 367–371, 375, 379, 387, 392, 397, 398, 778, 793
Medium (middle term), 306, 310, 314, 315, 317, 319, 324, 325, 330, 336, 337, 353, 550, 670
Memory, 396, 688, 710, 720, 722, 723
Mental, xli; contradiction, 979; copula, xlvi, 261; demonstration, 674; entity, xxxiv; mental language, xxxiv, xxxvii, 509*n28;* mental language is not an "ideal language," xl*n32;* mental name, 15, 16, 834; no synonymy in mental language, 309, 309*n9;* process, 392; proposition, xli–xlvi, 12*n27,* 13, 24, 103, 229*n8,* 835, 836, 837, 841, 842, 848, 849, 931, 932, 936, 962, 983
Mentire est contra mentem ire (to lie is to go against one's mind), 831, 845
Meta: definition of, 501; discussed or mentioned: 495, 520, 596–597; division of *metas,* 502–504; of falsehood, 502–503, 520; of refutation, 598–599, 943; of implausibility, 502–503, 520, 598–599; of impossibility, 598; of redundancy (*nugatio*), 601, 608; of solecism, 502–503, 599
Middle term: definition of, 310; discussed or mentioned; 373, 375, 379, 387, 392, 397, 398, 408, 409, 658, 664, 671, 713, 714, 747, 758, 760, 793, 916. See also *medium*
Minor extremity: definition of, 310; discussed or mentioned: 314, 315, 317–319, 329, 333, 334, 336–337, 341, 353–356, 362, 367–371, 375, 379, 387, 397, 398, 758, 793
Mixed modal syllogisms, 350–363
Modals. *See* proposition
Mode: analogous to quantifiers, 82*n123;* in modal propositions, description of, 67–68; is a term in composite modals, 88; is part of a complex copula, 72*n110;* sometimes a determination of the copula, sometimes a term, 67. *See also* copula: complex
Modes of appellation, 891, 892, 895–897; of confusion, liii, 252, 264, 265, 279, 280, 281; of definition, 631, 635, 636, 639, 640, 662; of distribution, 267, 270–272; of division, 619, 620, 627–629; of imposition, 120–121; of pertinence (*adiacentia*), 297, 880–881; of predication, 130, 137, 151, 154, 173, 192, 201, 204, 880; of privation, 211; of question, 670; of signification (*modus significandi*), 20, 120–121, 223, 293, 607, 921; syllogistic modes, 245, 305, 311; of the three figures, 319–320. *See also* syllogism
Mood, xl*n32,* liii, 20; indicative, 963; optative, 996
Most general genus (*genus generalissimum*). See *genus: generalissimum*
Multiplicity (*multiplicitas*). *See* ambiguity

Name: abstract and concrete, 445–446, 448; adjectival, 16, 265, 266; collective, 456, 458; compound, 16; definition of, 14–17; discussed, 145, 404–405, 414–415, 433–434; equivocal vs. univocal, 832; finite, 15; infinite, 15–16, 238; oblique, 15–16, 18–19, 250; oblique name cannot be subject or predicate, 238–246; simple, 19; subsantival, 237, 238; substantive, 238, 247, 266, 649, 652
Natural matter, 39–42. *See also* proposition: matter of
Natural science, 54, 449, 451, 686, 708–710, 723, 748, 773, 774, 776
Naturalis potentia vs. *impotentia,* 185
Necessary proposition. *See* proposition: categorical: modal
Negation: infinitizing vs. negating, xlii–xliv, 26, 28*n61,* 32, 34–35, 43–47, 51, 54, 73, 92–95, 95*n151,* 100, 151, 206, 211, 230, 230*nn11–12,* 237, 250, 269, 271, 290, 302, 374–375, 527, 592; rule of, 923
Negatively convertible terms. *See* term
Nominal definition (*definitio dicens quid nominis*). *See* definition
Nota causalitatis. See signs of causality
Notitia complexa (complex cognition), 687
Nugatio (redundancy), 56, 502, 504, 600, 601, 635, 647
Numerically the same, 109–111
Numerus ('number'), is a generic term, 618*n4*

Obligation, 991, 992, 948
Obligational disputation, 256, 932
Object of knowledge and opinion, immediate vs. remote, 711
Oblique names (*nomina obliqua*) as opposed to uninflected (*recta*), 15. *See also* name
Opposition: absolute vs. relative, 178; of categorical propositions, 36; kinds of, 36, 206–213; laws of, 41–43, 79; *magna figura* of, 44–45; of modals, 77; square of, 37–39
Oratio (expression). *See* expression
Orationes infinitivi modi (accusative-with-infinitive constructions and 'that-clauses'), xlvii, 254, 254*n55,* 851, 853, 867, 897*n98,* 935, 963*n172*

Particular signs, 20, 43, 56, 84, 90, 231, 232, 270, 284. *See also* signs of quantity
Part-in-mode, 68, 409, 436, 438, 555, 555*n82,* 623, 775
Passibilis qualitas (passible quality), 186–187
Passio (attribute, affection): discussed, 4, 4*n6,* 5, 15, 128, 169, 169*n38,* 186, 621, 646; passion, 61, 193–194; *per se,* 169; *propria passio* (exclusive characteristic), 224, 415, 417. *See also* affection; attribute
Per accidens, 40, 169, 174, 178, 258, 328, 333, 471, 550, 621, 652, 726–730, 735, 737, 792, 886
Per impossibile, 322–323, 324, 331, 334, 335, 343, 369, 371, 376, 384, 385
Per quid, 640
Per se, 7, 7*n13,* 8, 40, 69, 69*n105,* 159, 161–163, 169, 169*n38,* 174, 197, 212, 257, 404, 446, 471, 474, 550, 572, 621, 644, 658, 660, 661, 664, 686, 688, 724–736, 753, 782, 792, 794, 805
Per se and primarily (*per se et primo*), 69, 69*n105,* 258, 632–634, 731, 736
Perishing of the subject, explained, 130
Permanent matter, 444
Perseity (*perseitas*), 725, 726, 731, 733, 734
Perspectiva (optics), 775
Pertinence (*adiacentia*), 293, 297, 880–881
Petitio principii (begging the question), 395, 694, 763, 778, 780, 784, 785, 818. *See also* fallacy
Planet (in examples), 78, 78*n117,* 90, 99, 342, 345, 358, 399, 490, 757, 758, 772, 777
Ponere in numerum, 665, 669
Potentia (natural capacity, power), 185–186, 211
Powers of syllogisms (*potestates syllogismorum*), 305, 312, 323, 376, 377, 379, 380, 384, 819. *See also* syllogism
Practica sophismatum (sophistic exercises), 5, 216, 602
Precognitions, 664, 675–678, 698
Predicable: denominative, 622; description of, 103–105; division of, 106–107; discussed: xlviii, 548; incomplex term, 151; predicable vs. universal, 105–106
Predicable whole, 617–620, 623; definition of, 620, 621
Predicate, xlii, xliv, xlvii, 21–29, 231; appellates its form, 878, 882, 918; appellative, 881; complex, 59, 591–592; defined, 241
Predication: causal, 668; denominative vs. essential/quidditative, 106, 123, 126–128,

131, 135, 138, 147–149, 147*n9,* 155, 155*n20,* 156–158, 163, 169, 169*n38,* 175, 183, 202, 629, 640, 653, 668, 732, 787, 885, 886; direct, 153, 155, 157, 175; essential, 638, 639, 679; essential, with connotative terms, 175; 'identity theory' of, lvi–lvi; 'identity theory' of predication is based on an indemonstrable principle, 855; immediate, 131; indirect, 128, 159, 731; 'inherence theory' of, xliii*n37,* lvi–lvii; modes of, 106, 107*n7,* 130; quidditative, 147, 149, 157, 192, 641, 644, 659, 667*n98,* 668–670; univocal vs. equivocal and univocal vs. denominative, 135, 147, 159
Primacy (*primaevitas*), 771, 772
Primary substance, 108*n10,* 131, 151–155, 157–161, 163, 173, 257, 645, 728; meaning singular term, 153
Primo (primarily), 736–738, 743, 746, 793
Principle: first, 683, 691, 698, 700, 710–714, 716–721, 723, 744, 782, 784, 799; self-evident, 698–700, 718. *See also* indemonstrable principles of demonstration
Privation, 211, 451, 472, 545, 655, 675*n112*
Privative opposition, 206, 208, 210–211, 214, 460, 466, 468–469, 471–472, 640. *See also* opposition
Privative terms, 211, 404, 467, 628. *See also* term
Probatio (proof), 572, 595, 714–717
Pronouns: anaphoric, 59*n90,* 267, 905*n107;* demonstrative, 223, 267, 752; discussed or mentioned: 87*n128,* 90, 221–223, 866, 891; personal, 285–286; reflexive, 286–287; relative, 223, 266–269, 272, 276, 284–290, 314, 315, 350, 369, 885, 924, 925; relative pronouns of accidents, 287–288; possessive, 287
Proper principles (*principia propria*), 500
Properties of terms, xxxi, xlix
Property (*proprium, proprietas*): discussed or mentioned, 12*n26,* 40, 96, 132, 133, 135, 138, 139, 143, 151, 152, 157, 162*n23,* 163, 170, 171, 177–181, 187, 188, 191, 475; *proprietas,* 136, 631, 632, 634, 635, 640, 642, 645, 750, 763, 791, 792; *proprietas* distinguished from *proprium,* 136*n43*
Proprium: definition of, 126–128; discussed or mentioned, 104*n2,* 109, 417, 656, 813, 926; various senses of, 125–126
Proportion vs. proportionality, 459–460, 475–477. *See also* analogy
Proposition:
— categorical, xliv, lii, 5, 17–21, 21*n41,* 22–25, 58, 61–64, 74, 237, 244, 247, 262, 285, 286, 457, 468, 527, 531, 577, 585, 630, 635, 637, 670, 674, 735, 744, 823, 842, 907, 923
— assertoric (*de inesse*), xlv, xlvii, 29–31, 29*n62,* 71–75, 82–83, 89, 97, 336, 337, 341, 346, 347, 350, 353, 356, 735; affirmative, 397, 341, 344, 351, 354, 638, 786, 806, 847, 848, 851, 945; described, 34–35, 305; affirmative has existential import, xlii–xlv; an affirmative with an empty subject term is false, 46, 55, 74, 293, 346, 819, 834, 847, 848, 850, 863, 918, 923; conversions of, 48–57; principal parts of, 21–22, 24, 61; quality of, 34–35, 46–51, 73–74, 90, 97; quantity of, 26–27, 31–34, 47–51, 90, 97, 231–232, 244; singular, 247, 400, 720, 722, 723; unity of, 584–585; universal, 239, 247, 250, 720, 723
— modal, xlvii, 5, 29–31, 42–43, 45, 67–100, 78, 82–83, 89, 336, 346, 347, 735; composite vs. divided, xlvii, 69, 71, 88, 95, 98, 335–338, 347, 527, 531, 783, 899; about contingency, 97–100; conversions of, 84–88, 95–97, 241, 241*n36,* 246–248, 457; proposition about possibility/necessity/contingency (*de possibili/necessario/contingenti*) distinguished from possible/necessary/contingent proposition, xlv, xlv*n43,* 30*n62,* 31, 31*n64,* 40, 296, 299, 335–337, 339–341, 350–352, 354*n42,* 548, 706, 711, 729, 734, 735; quality of, 73–75, 90–95; quantity of, 75–77, 244
— contradictory of, xliv, 29, 38, 43–47, 63, 96, 249
— definition of, 20–21
— denominative vs. quidditative, 153–154, 730, 734
— divisions of, 21–22, 29–35
— hypothetical, 5, 21, 21*n41,* 22–23, 53, 57–61, 64, 248, 270, 286, 457, 635, 637, 670, 674, 735, 741, 823, 903, 903*n101,* 907; causal, 57, 64, 726, 728–730, 735, 756, 757, 759–761, 794; conditional, 57, 61, 64–65, 575; conditional promise, 993; conjunctive, 24, 57, 60, 62–63, 65–66, 99, 249, 264, 286, 456, 457, 527, 558, 635, 637, 741; disjunctive, 24, 57–58, 63, 99, 263, 264, 273, 274, 277, 456, 457, 527, 592, 628, 630, 741, 909–910, 923; distinguished from

Proposition (*continued*)
syllogism, 64; effectual, 732; exceptive, 53*n83,* 69, 69*n105,* 278, 823; exclusive, 53*n83,* 69, 69*n105,* 823; local, 57, 60, 66; reduplicative, 53*n83,* 69, 69*n105,* 758, 823; temporal, 57, 60, 65–66
— immediate, 703, 716, 781. *See also* indemonstrable principles of demonstration
— indirect, 154, 732
— matter of, 39–42, 49
— mental, 234, 261, 521, 637, 688, 835, 836, 837, 841, 848, 849, 931, 932, 936, 962, 983; primarily true or false, xxxiv, xl–xliii, xlviii, 11, 22, 103, 224, 225, 428, 824, 941, 948
— negative, 34–35, 73, 351, 356, 786, 795, 796, 856; has no existential import, xlii–xlv
— not true because things are as it signifies them to be, 90, 858–859, 859*n50*
— of unusual construction, 29*n60,* 43, 45
— *per se nota* (self-evident), 401, 410. *See also* indemonstrable principles of demonstration.
Proprietas (property). *See* property
Proprium (property). *See* property
Propter hoc, 658, 747, 771, 774
Propter quid, 572, 639, 640, 640*n43,* 655, 656, 658–661, 664, 665, 666*n93,* 668, 670, 672–674, 726, 736, 739, 747, 748, 753–755, 757, 758, 771–775, 777–780, 788, 789, 793–795, 799, 801, 805, 806, 808, 816–818
Propter quid ita est, 739, 753, 756, 774
Prudential demonstrations. *See* demonstration
Pure syllogistic, 306*n2,* 366*n57*

Quaestio ponens in numerum (question concerning a number of things), 669
Quality, 151, 152; category of, 182–183, 188, 190, 192*n72,* 257, 543, 669, 811; description of, 182–183; properties of, 190–191; *qualis* ('such and such'), 188–190; species of, 184–188
Quantification theory, lvii*n67,* 33*n65,* 82*n123,* 306*n2,* 874*n76*
Quantifier-shift fallacy, 874*n76*
Quantity: by coincidence vs. by itself (*quantitas secundum accidens* vs. *secundum se*), 168–169; category of, 164–170, 199, 669, 811; continuous vs. discrete, 164–168, 624–626; discussed, 151–152, 164–172; properties of, 170–172
Question: definition of, 393; demonstrable, 667, 670; discussed, 495, 667–669
Quia, 656, 658, 659, 661, 664, 666*n93,* 753, 754, 757, 759, 763, 764, 768, 771, 772, 775, 777, 789
Quia est (that it is [somehow]), 572, 634, 665, 666, 666*n93,* 667, 668, 671, 675–677, 680, 740, 771–774, 778, 779, 794, 805
Quia est vera (that it is true), 677
Quia ita est, 739, 754, 755, 761
Quid est, 634, 640, 644, 665, 667*n98,* 668, 670, 673, 676, 685, 808, 810
Quid est esse rei (essence of the thing), 638, 639, 655, 656, 659, 677
Quid nominis (meaning of the name, nominal definition), 235, 238, 309–310, 411, 506, 680, 685. *See also* definition
Quid rei (essence), 651
Quidditative, lx*n74,* 622, 727, 812; definition (*see* definition); quidditative predication (*see* predication); term, 483
Quiddity, 126–127, 641, 665, 765
Quod, 666, 666*n93*

Ratio: account, 679; concept, 120, 143, 165, 195, 349, 555, 625, 626, 667, 667*n96,* 708; definition, 155, 555, 555*n83,* 556; nature, 431, 597, 737; reason, 144, 718; reasoning, 4
Ratiocinatio (reasoning), 11*n21*
Redargutio (refutation), 495, 502, 503, 597
Reduplication, 371, 758. *See also* syllogism: reduplicative
Reflexio (self-reference of a proposition), 857, 952–997 *passim*
Relation (*relatio*): anaphoric, 905; of causality, 640*n43;* discussed, 150, 151, 170, 410–411, 669, 952, 969, 972, 983, 984, 992; is not the genus of relative terms, 174; of the *locus* (*habitudo localis*), 433; meaning the term 'relation', 173, 177, 192; of subordination vs. superposition (*relativa suppositionis* vs. *superpositionis*), 176–177. *See also* relative terms
Relative opposition, 460–461; kinds of, 207. *See also* opposition
Relative terms: definitions of, 172–176; division of, 176–177; foundation and terminus of, 288; properties of, 177–182; terms in the category of relation: 468–469
Relative terms (anaphoric pronouns): distinguished from categorial relative terms,

281; of diversity, 282–284; division of, 282–283; of identity, 282, 283, 285, 288, 289. *See also* term: relative
Remote matter. *See* proposition: matter of
Restriction, xxxiv, 221, 227, 298, 300, 306*n2,* 733, 824, 861, 914, 927
Risible (property of man), 12, 12*n26,* 40, 53, 104*n3,* 109, 111, 112, 127, 139, 247, 258, 302, 349, 371, 381, 385–386, 395, 412–413, 417, 423, 436, 462, 475, 478, 522, 523, 527, 570, 575, 637, 660, 665–666, 672, 673, 730–733, 736, 737, 797, 803–804, 836–838, 926, 927, 928

Scientia (knowledge, science), 4, 6, 678, 704, 706, 709, 787
Scientia demonstrativa (demonstrative science/knowledge), 92*n143,* 396, 429, 674, 676, 682, 725, 726, 729, 747; and natural supposition, 259–260
Scientia media, 776
Scientia permansiva, 725
Second adjacent (*secundum adiacens*), 'is' as an absolute predicate, 182, 216, 242, 378, 431, 429, 430, 895. *See also* copula
Second intention (*intentio secunda*), 428, 475. *See also* intention (*intentio,* concept)
Secondary substances, 152–156, 160, 163, 257
Secundum accidens (by coincidence), 168–169
Secundum quid, 670, 672, 734, 787
Secundum quid et simpliciter (with respect to something and absolutely), 560. *See also* fallacy, generation
Secundum quod ipsum (on account of what the thing is), 69, 69*n105,* 380, 551, 664, 724, 725, 736, 737, 743, 746, 768, 770–772, 793–797, 800–802, 805–807
Secundum se (by itself), 168
Sempiternal, 947, 948
Sensus communis (common sense), 652
Sententia (claim), 601
Sermo (phrase, speech), 4, 61, 255
Si est (if it is), 665, 667, 667*n97,* 671, 672, 675, 678, 808, 818
Sign of causality (*nota causalitatis*), 755, 758
Sign of division (*signum divisionis*), 26, 250, 530, 531
Signification: *ad extra* vs. *apud mentem* (outside vs. in the mind), xl–xli, 233, 254; categorical, 536; conventional vs. natural, xxxv*n23,* 948; description of (to signify), 828; discussed or mentioned, xxxv, xxxv*n23,* xxxvi–xxxviii, 10, 13, 15–16, 106, 127, 181, 221–222, 235, 621, 838, 936, 937–939; distinguished from supposition, 221–223; essential modes of, 521, 522, 535; formal, 969, 970, 972, 973, 976, 978, 980, 986, 988; grammatical modes of, 16, 137, 521, 522, 536, 607; modes of, 520–523, 541; principal or primary, 517, 519–521, 622; ultimate vs. immediate, 255–257
Significative utterance, 5, 10, 13–15, 144, 225, 228, 236, 246, 507, 547, 636, 749, 827, 831, 832; complex/incomplex, 636; definition of, 9–10; division of, 10–14
Significatively (or personally, as opposed to materially), xlviii, 18, 19, 89, 91, 93–95, 103, 105, 109*n13,* 110, 111, 111*n17,* 112, 115, 129, 151–153, 161, 173, 180, 183, 202, 225, 226, 230, 246, 256–258, 302, 307, 315, 346, 392, 417–419, 522, 592, 635, 636, 640–642, 653, 678, 680, 729, 765, 867, 873, 937, 963
Signs of quantity (*signa quantitatis*), 26, 28*n58,* 29, 56, 94*n149,* 231*n13,* 234, 241*n36,* 275*n77*
Signum (evidence), 260
Signum/signatum (sign, designatum), 828. *See also* sign of division; signs of quantity
Simpliciter (absolutely), 476, 620, 659, 660, 668, 670, 672, 724, 734, 776, 778, 779, 787, 807; absolutely speaking, 65, 214, 897. See also *secundum quid et simpliciter*
Simplicity, semantic vs. syntactic, xxxviii–xli
Sine tempore (signifying without time), the difference of names from verbs, 14, 14*n30,* 16, 20
Singular terms. *See* term
Singulars, are not definable, 622
Sophistica (art of sophistry), 3, 43, 495, 505, 586; defined, 496–498; sophistry vs. dialectic, 498, 504, 586
Species, 116, 308–309, 617*n3,* 622, 864; *species specialissima* (most specific species), 108, 116, 187; *species specialissima* vs. subaltern species, 116–117, 123
Square of opposition, 37–38, 309*n10*
Status, 298–301; alienation of, 299, 301. *See also* ampliation; restriction
Subaltern genus, 150, 164, 595
Subalternation, 457

Subalterns: discussed, 36–38, 41–42, 44–45, 47, 51, 77, 79, 81–83, 87, 463, 468; law of, 41
Subcontraries: discussed, 36–38, 41, 44–45, 77–83, 468, 910; law of, 41, 238, 910
Subject: appellative vs. non-appellative, 881; conjunctive, taken dividedly or collectively, 249, 275; defined, 241, 249; discussed, xlii, xlv, xlvii, 21–29, 231; disjunctive, 520; "perishing" of, 130; simple vs. complex, l, 59; taken in two senses, 678
Subjective part, 428, 434, 617, 626
Subordination: of concepts, xxxvi–liii *passim,* 11, 173; of sciences, 775–777; of species, 113. *See also* relation: of subordination vs. superposition
Substance: category of, 158, 159, 212, 226, 227, 652, 659, 811; composite is matter and form, 248, description of, 149, 151–154, 157, 163; *locus* from substance and from the concomitants of substance, 406–408, 415–417, 419–421, 456–457; primary vs. secondary, 152–155, 163, 539, 728; taken in two ways, 153; taken materially or personally, 257
Substantivation, 230
Supposition: absolute vs. relative, 252, 259; and acceptation, 28; accidental, 243, 252, 259; alienation of, 302; ampliation of, 52; causes of distributive supposition, 265–273; causes of nondistributive supposition, 273–281; common, 252, 259, 870, 873; common modes of, 251–252; confused, 231, 273–281, 870; confused vs. determinate, 252, 262–265, 870, 873; conjunctive (collective), 104; description of, 866; discrete, 252, 259, 870, 873; discrete cannot be ampliated, 918; discussed or mentioned, xxxiv, xxxlviii*n27,* xlix, li, lvi, lviii, 96, 221–224, 228, 251, 520, 547, 661, 824, 836, 837, 838, 861, 863, 886, 929, 938, 939; distributed does not follow from non-distributed, 912; distributive vs. non-distributive, 252, 264, 870, 873, 874, 875, 949; division of, 221, 251–253; general modes of, 221; grammatical vs logical, 222, 866; improper or figurative, 251; material, xlix, l*n54,* liii, 89, 92, 221, 254, 256–258, 348, 522, 538, 547, 558, 636, 765, 865, 886, 934; material supposition and the various senses of 'different' and 'same', 107*n8,* 109*n13;* material vs. personal, 252–253, 255, 257, 258, 282, 284, 418, 522–523, 537, 550, 867, 932; merely confused, 264, 273, 275–276, 276–280, 873, 874; natural, xlvi, 234*n17,* 243*n38,* 252, 259, 262, 709; no valid consequence form confused to indeterminate, 912 (*see also* quantifier-shift fallacy); of oblique terms, 202, 866; personal, l, lvlvi, 168, 255, 257–262, 625, 765; of a proposition, 917; simple, 253; supposition and truth, 858–859; theory of supposition and the syllogism, 306*n2*
Supremum genus (highest genus), 117
Syllogism: *ad impossibile,* 368–369, 376, 384–385, 513–514, 579–580, 598, 784, 916, 958, 961; affirmative, 307, 313, 315, 352, 353, 381, 725; assertoric, 343, 553; circular, 380–382; compared to conditionals, 64–65; conversive, 382–384; definition of, 308–309; demonstration is a syllogism, 656; demonstrative vs. dialectical, 347, 513, 564, 566, 656, 675, 695; discussed or mentioned, 21, 64, 266, 305, 393, 398–399, 423, 692, 693, 695; expository, 86, 280, 295, 296, 313–317, 322, 324, 327, 349, 358, 366, 698, 866, 904, 989; hypothetical vs. categorical, 399, 741; incomplete (enthymeme), 393–394, 397, 399, 424; with infinitive terms, 305; modal, 553; in modal proposition, 335; negative, 307, 315, 324, 353; with oblique terms, 239, 244, 305, 365–370, 399, 553; from opposites, 386; ostensive, 513, 548, 580, 595; *per impossibile* (*see* syllogism: *ad impossibile*); perfect vs. imperfect, 320, 322–323, 324, 354, 367; proved by exposition, 341, 343–345, 348, 362–364, 371, 377; reduction of imperfect to perfect, 321–324; reduplicative, 365, 370, 371, 553; sophistic, 603; syllogistic terms vs. terms of propositions, 367–369; theory of syllogistic inferences and supposition, 306*n2*
Syncategoremata, 19, 309, 543, 637; cause almost all the difficulties in logic, 19. *See also* concept; term
Synonymous expressions, not distinguished in mental language, 309*n9*

Tabula rasa (clean slate), 720
Tense, xl*n32,* 14*n30,* 18, 20, 29*n62,* 52, 52, 54, 292, 293, 520, 521, 853, 861, 866, 878, 881, 882, 915, 920, 976*n188*
Term (*terminus*): absolute, xlix, 146*n7,* 173,

259; abstract vs. concrete, lx, 146, 147, 149, 156, 175, 183, 189, 190, 191, 192, 194, 196, 210–211, 215, 226, 411, 486–488, 642, 654, 655; accidental, 149, 149*n13,* 153, 154, 156, 160, 163; adjectival, 17*n36;* affirmatively vs. negatively convertible terms defined, 382; ampliative, 374, 378, 378*n68,* 880; appellative, xlix, l, 291, 292–294, 880, 890; categorematic, xl*n33,* xlviii–xlvix, lv, 11*n22,* 33, 50, 202, 232, 236–237, 261, 268; categorical (*praedicamentalis,* i.e., one that belongs to a category), 200; causal, 656, 657, 754, 766; common, xlvii, lv, lvii, lx, 32–33, 46, 54, 79, 149, 160, 265, 284, 313–315, 317, 489, 539, 622, 633, 793, 804, 875, 910; complex, l–li; complex vs. incomplex, 150–151, 200, 250, 251, 265, 408, 507, 631, 632; concrete, lx, 146, 147, 156, 188–189, 190, 191, 195, 211; conjunctive, 25, 249, 275, 600; connotative, 147, 639, 642, 644–646, 729, 735; contradictory, 404, 470, 472; definition of, 305–306; denominative, 147, 188, 622, 645, 727, 735; disjunctive, 25, 248, 629; disparate (terms), 207; distributed sometimes follows from nondistributive form on account of matter, 913–914; equivocal, 144, 621; fictive, 154, 382 (*see also* chimera; vacuum); finite, 55, 372, 374, 470, 629, 742; predicate, 628, 629; incomplex, 150–152; inferior, 148–150; infinite, 55, 93, 251, 271, 372, 374, 470, 629, 640, 923; intermediate or mixed, 232–233; mental, 145, 153, 234, 254, 507, 522, 538–539, 621; nonsignificative vs. nonsuppositive, 838; oblique, li, 25, 33, 38, 42–43, 45, 51, 200–202, 227, 238, 241, 282, 296, 297, 413, 439, 657, 660; opposite, 206, 210–211, 404, 468; predicamental, 221; privative, 233, 291, 404; purely categorematic, 232–233, 374, 543, 592; purely syncategorematic, 232–234; quidditative, 433, 645; relative, 180–182, 192*n72,* 223, 281–283, 288, 289, 290; relative vs. absolute, 172–176, 221, 259, 600; significative, 10, 67, 148, 156, 207, 216, 621, 652, 677, 704; simple vs. complex, xlvi, 17–19; singular, 32, 34, 77, 104, 108, 108*n10,* 120, 127, 132, 149, 153, 157, 160, 539, 633, 633*n26,* 875; substantival, 159–161, 163, 236–238; syncategorematic, xl*n33,* xlvi43, 49, 200, 202, 223, 230*n12,* 232–233, 236, 238, 242, 243, 268, 374, 375, 592, 806; universal, 149, 153, 662; univocal, 622

Termination of a question (solution of a problem), 131
Terminus a quo and *ad quem,* 451–452, 616
Third adjacent (*tertium adiacens*). *See* copula
This something (*hoc aliquid*), 159, 204–205
Totum in modo (whole-in-mode), 408
Totum integrale (integral whole), 403, 434; definition of, 426–428
Transcendental name, 181, 181*n56*
Transient matter, 444
Transposition, 311, 320, 322–323, 328, 330–334, 357, 575
Transumption, 459–460, 478–480, 770
Transumptive, 256
Tree of Porphyry, 116, 117, 119, 124
Triangle: a triangle has three angles etc. (example of a demonstrated conclusion), 258, 260, 348, 370, 551, 553, 666, 667, 673, 716, 732, 737, 767, 769, 795–797, 799, 800*n352,* 804, 805, 816, 897, 898–900
Truth-conditions vs. causes of truth, 56*n85*

Universal, lv; taken for a common term, 106; vs. 'predicable', 105
Universal signs, 25, 29, 32, 43, 56, 99, 232, 265, 270, 271, 274, 284, 435
Universal whole. *See* whole: and part
Univocal names, definition of, 145
Univocal term, distinguished both from equivocal and denominative, 159
Useless combinations (*coniugationes inutiles*), 327. *See also* syllogism
Usuales (practical demonstrations), 753
Usus (use), 453
Ut in pluribus (for the most part), 788
Ut nunc (as of now). *See* consequence; *de inesse simpliciter* vs. *ut nunc;* demonstration

Vacuum (in examples), xlv*n42,* 12, 226–228, 236, 251, 412, 557, 584, 637, 638, 662, 665, 667, 679, 680, 719, 735, 819, 834, 839, 847, 862, 936
Verb: definition of, 18–20; discussed, xlvii, 541–542, 884; infinitive, 246; intentional, lvi*n65; verba de inesse,* 339
Verification, 221, 224–225, 291; distinguished from supposition, 221; and mental propositions, 224–225
Via antiqua vs. *moderna,* xxvii, xxix, xliii*n37,* lv, lxi
Virtual whole, 619

Virtus aestimativa, 722
Virtus propria, 256
Virtutes (virtues, powers), 138, 146, 184, 446–448, 451, 615, 619, 692

Whatever mobilizes the immobilized immobilizes the mobilized, 271, 272
Whole: integral, 420–421, 426–430, 432, 434, 440, 617, 623; and part, 420–421, 433, 439, 616, 617, 619; quidditative, 618, 624; subjective, 422–426, 428, 434–435, 457; universal, 420–425, 427–428, 435, 438, 457
'Whole' as a distributive sign, 267, 268
Whole-in-mode, 68, 68*n102,* 408–409, 420–421, 436–439, 556, 621–623, 775, 889, 917, 918
Whole-in-place, 420–421, 438–439
Whole-in-quantity, 420–421, 425, 434–435, 438–439, 457, 573, 871, 872
Whole-in-time, 420–421, 439, 871
Wish, absolute vs. conditional, 997